FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
TMØ3-CA
TMØ3-CB
TMØ3-CE
TMØ3-CF
TMØ3-FA
TMØ3-FB
TMØ3-FE
TMØ3-FF
TMØ3-CN
TMØ3-FN

TMØ3

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO.
MP00349

REV.	CHG. NO.	DATE
A	TMØ3-00001	7-NOV-77
B	TMØ3-2	2-78

NR REVISIONS

USED ON OPTION/MODEL

SHEET I OF 1

DRN.	T.Quillin	DATE 1APR77
CHK'D		DATE 2MAY77
PROJ. ENG.		DATE 5-23-77
FIELD SERV.		DATE 04-MAY-77

digital

TITLE: TMØ3 PRINT SET

SIZE	CODE	NUMBER	REV.
B	TC	TMØ3-Ø-1	B

DIST.

DRB 124

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

SEQUENCE SEQUENCE

FOR TABLE OF CONTENTS SEE DWG. NUMBER B-TC-TMØ3-Ø-1

THIS IS PRINT SET

UNIT VARIATIONS		PRINT SET
VAR	TITLE	
TMØ3-CA	18 BIT PE & NRZI 115V	
TMØ3-CB	18 BIT PE & NRZI 230V	
TMØ3-CE	18 BIT PE & NRZI 115V	
TMØ3-CF	18 BIT PE & NRZI 230V	
TMØ3-FA	16 BIT PE & NRZI 115V	
TMØ3-FB	16 BIT NRZI 230V	
TMØ3-FE	16 BIT PE & NRZI FOR TU45 115V	
TMØ3-FF	16 BIT PE & NRZI FOR TU 45 230V	
TMØ3-CN	18 BIT PE & NRZI FOR TU77-230V	
TMØ3-FN	16 BIT PE & NRZI FOR TU77-230V	

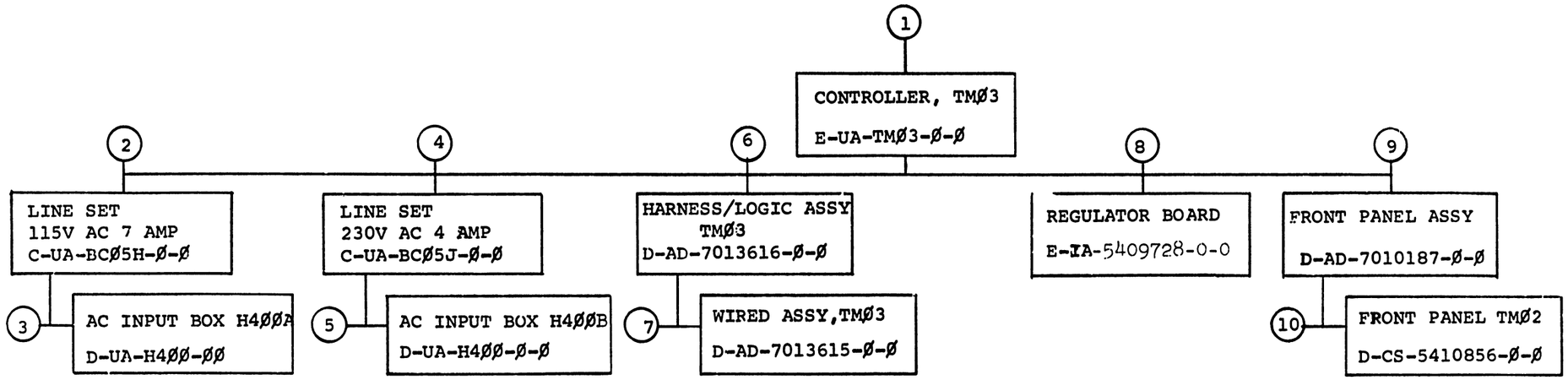
REVISIONS		
DATE	CHG. NO.	REV
11-77	TMØ3-0000I	A
2-78	TMØ3-2	B

USED ON OPTION/MODEL

SHEET 1 OF 3

DRN. T.Quillin	DATE 30NOV76	TITLE Controller, TMØ3
CHKD.	DATE 20MAY77	
PROJ ENG.	DATE 1-5-77	
PROD.	DATE 4-6-77	SIZE B / CODE DD / NUMBER TMØ3-Ø / REV B
FIELD SERV.	DATE 5-23-77	DIST

DRB 106



TITLE		SIZE	CODE	NUMBER	REV
CONTROLLER, TMØ3	SHEET 2 OF 3	B	DD	TMØ3-Ø	B

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	B-TC-TMØ3-Ø-1	TMØ3 TABLE OF CONTENTS	-
	MP00349	FIELD MAINTENANCE PRINT SET	-
	E-UA-TMØ3-Ø-Ø	CONTROLLER TMØ3	M
	A-PL-TMØ3-Ø-Ø	PARTS LIST	M
	D-CS-M89Ø8-Ø-1	RECEIVER TERMINATOR	E
	D-CS-M89Ø8-YA-1	RECEIVER TERMINATOR	E
	D-CS-M89Ø9-Ø-1	MASS BUSS INTERFACE	E
	D-CS-M59Ø3-YA-1	MASS BUS TERMINAL	E
	D-CS-M8914-Ø-1	18 BIT FIDDLER	E
	D-CS-M59Ø3-Ø-1	MASS BUS TERMINAL	E
	D-BS-TMØ2-2	MASS BUS RECEIVER	E
	D-BS-TU16-Ø-2	MASS BUS TRANSCEIVER	E
	D-CS-M89Ø1-YB	45 IPS DATA SYNC	E
	D-CS-M89Ø1-YC	75 IPS DATA SYNC	E
	D-CS-M89Ø1-YD-1	125 IPS DATA SYNC	E
	D-CS-M8932-Ø-1	TAPE CONTROL PHASE ENC.	E
	D-CS-M8933-Ø-1	TAPE CONTROL COMMON MODE	E
	D-CS-M8934-Ø	TAPE CONTROL NRZI	E
	D-CS-M89Ø5-YB	MAINTENANCE REGISTER	E
	D-CS-M89Ø6-Ø-1	16 BIT FIDDLER	E
	D-CS-M89Ø9-YA-1	MASS BUS INTERFACE	E
	D-CS-M8914-Ø-1	18 BIT FIDDLER FORMAT	E
	D-CS-M8915-Ø-1	UNIVERSAL DATA FORMATTER	E
	D-CS-M8937-Ø-1	CONNECTOR TERMINATOR	E
	D-IA-7010075-Ø-Ø	LOGIC, BOX	M
	D-CS-5411128-Ø-1	MOUNT, SELECT SWITCH	E
	A-DC-7412377-Ø-Ø	DECAL, CONTROLLER	M
	D-UA-H74ØDA-Ø	POWER SUPPLY	M
	C-IA-7010418-Ø-Ø	CABLE FAN	M
	C-IA-7412368-Ø-Ø	BRACKET SHIPPING	M
	C-MD-7409479-Ø-Ø	PLATE, PRESSURE	M
	A-PL-7014352-Ø-Ø	CODING KEYS, SET OF	M
	E-MD-7414624-Ø-Ø	COVER SIDE	M
	C-MD-7414626-Ø-Ø	CARD GUIDE REWORK	M
	D-MU-TMØ3-Ø-MU	MODULE UTILIZATION	E
	D-CS-M8934-YA-1	TAPE CONTROL NRZI 75 IPS	F
	A-SP-TMØ3-Ø-4	ACCEPTANCE SPEC	
	A-SP-TMØ3-Ø-3	ENGINEERING SPEC	
2	C-UA-BCØ5H-Ø-Ø	LINE SET 115V AC 7 AMP	M
3	D-UA-H4ØØ-Ø-Ø	AC INPUT BOX, H400A	M
	A-PL-H4ØØ-Ø-Ø	AC INPUT BOX	M
	D-IA-5309845-Ø-Ø	BOX	M
	C-MD-5309849-Ø-Ø	COVER	M

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
3	A-DC-5309899-Ø-Ø	POWER CONTROL DECAL 115V	M
	C-IA-5409824-Ø-Ø	POWER CONTROL BOARD 115V	M
4	C-UA-BCØ5J-Ø-Ø	LINE SET 23ØV AC 4 AMP	
5	D-UA-H4ØØ-Ø-Ø	AC INPUT BOX H4ØØB	M
	A-PL-H4ØØ-Ø-Ø	AC INPUT BOX	M
	D-IA-5309845-Ø-Ø	BOX	M
	C-MD-5309849-Ø-Ø	COVER	M
	A-DC-5309900-Ø-Ø	POWER CONTROL (DECAL 23ØV)	M
	C-IA-5409825-Ø-Ø	POWER CONTROL BOARD 23ØV	M
6	D-AD-7013616-Ø-Ø	HARNESS/LOGIC ASSY (TMØ3)	E/M
	E-IA-7013614-Ø-Ø	HARNESS/LOGIC (TMØ3)	E/M
7	D-AD-7013615-Ø-Ø	WIRED ASSY (TMØ3)	E/M
	A-DC-7411881-1-Ø	DECAL LOGIC, REVISIONS	M
8	E-IA-5409728-Ø-Ø	REGULATOR BOARD	M
	D-CS-5409728-Ø-1	REGULATOR BOARD	M
	C-MD-5510892-1	#1 THERMAL STRIP	M
	C-MD-5510891-1	#2 THERMAL STRIP	M
	C-IA-5310126-Ø-Ø	HOLDER, CAPACITOR	M
	C-MD-5309779-Ø-Ø	CONTACT, COMMON CAPACITOR	M
	C-MD-5309781-Ø-Ø	CONTACT CAPACITOR	M
9	D-AD-7010187-Ø-Ø	FRONT PANEL ASSY	M
10	D-CS-5410856-Ø-Ø	FRONT PANEL TMØ2	E

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE: CONTROLLER, TMØ3

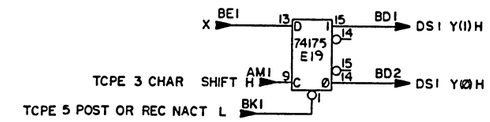
SHEET 3 OF 3

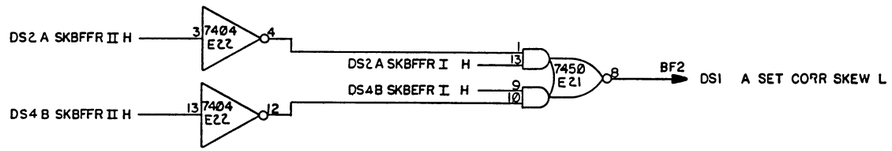
SIZE B | CODE DD | NUMBER TMØ3-Ø | REV

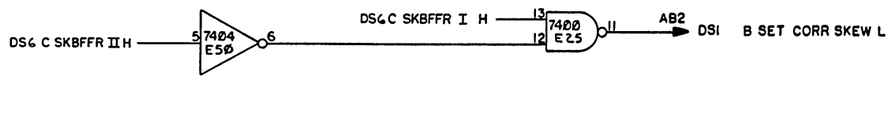
DF B 108A

	SLOT 1	SLOT 2	SLOT 3
X	SINGLE DD TRK H		INC COND (1) H
Y (1) H	CER (1) H		INC DATA (1) H

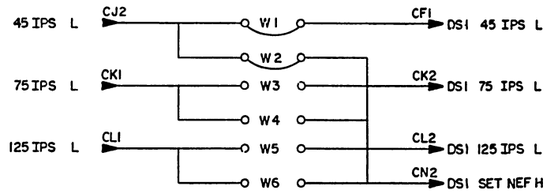
USE X,Y CHART TO DETERMINE INPUTS AND OUTPUTS OF 74175 FLOP.





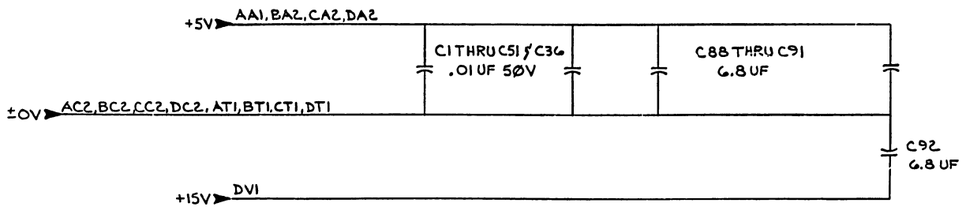


NOTES:
JUMPERS W1 THRU W6 INDICATE THE TAPE SPEED THE MODULE IS BUILT FOR. CHANGING THE JUMPERS DOES NOT CHANGE THE SPEED CAPABILITY OF THE MODULE.



NOTES

1. M8901 MODULES ARE LOCATED IN SECTIONS C,D,E,F OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.
2. PIN BK1 IS "TPCE 5 POST OR REC NACT L" ON ALL M8901'S WHEN IN TM02.



REVISIONS

CHK	CHANGE NO.	REV.
	M8901-YB-M4002	K

REVISED PER DRAWN

J. HESS 12-4-78

DRN		12-4-78
CHK'D		1-4-79
ENG.	J. H MDC	1-9-79
PROJ. ENG.	J. H MDC	1-9-79
PROD.		1-9-79
NEXT HIGHER ASSY.		
SCALE		
SHEET 1 OF 7		

FIRST USED ON

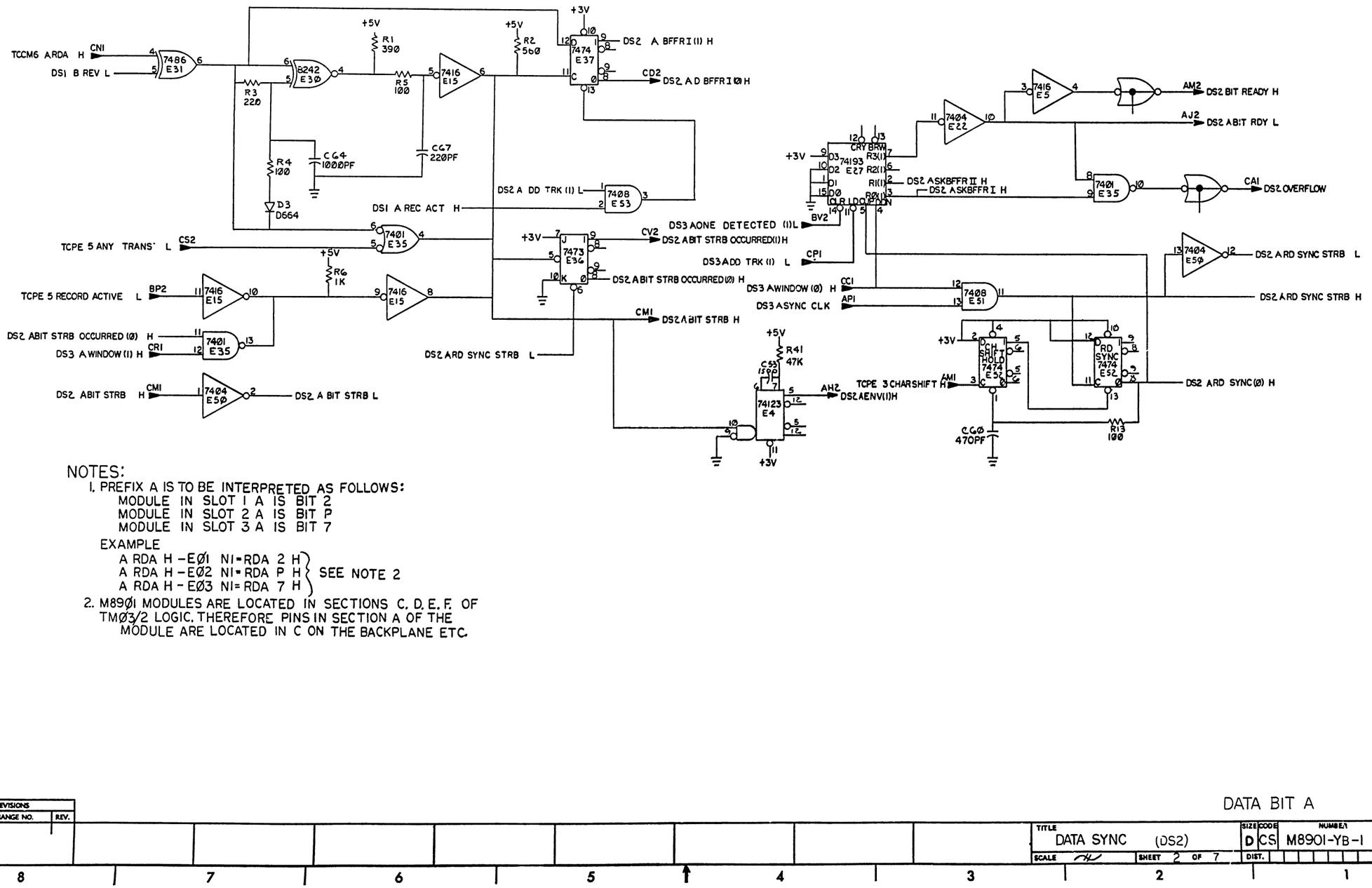
digital

TITLE

DATA SYNC (DS1)

SIZE	CODE	NUMBER	REV.
D	CS	M8901-YB-1	K

DIST.



NOTES:

1. PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 A IS BIT 2
   MODULE IN SLOT 2 A IS BIT P
   MODULE IN SLOT 3 A IS BIT 7

   EXAMPLE
   A RDA H – EØ1 NI = RDA 2 H
   A RDA H – EØ2 NI = RDA P H } SEE NOTE 2
   A RDA H – EØ3 NI = RDA 7 H
2. M89Ø1 MODULES ARE LOCATED IN SECTIONS C, D, E, F, OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT A

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS2)	D	CS	M8901-YB-1	K
SCALE	SHEET 2 OF 7	DIST.		

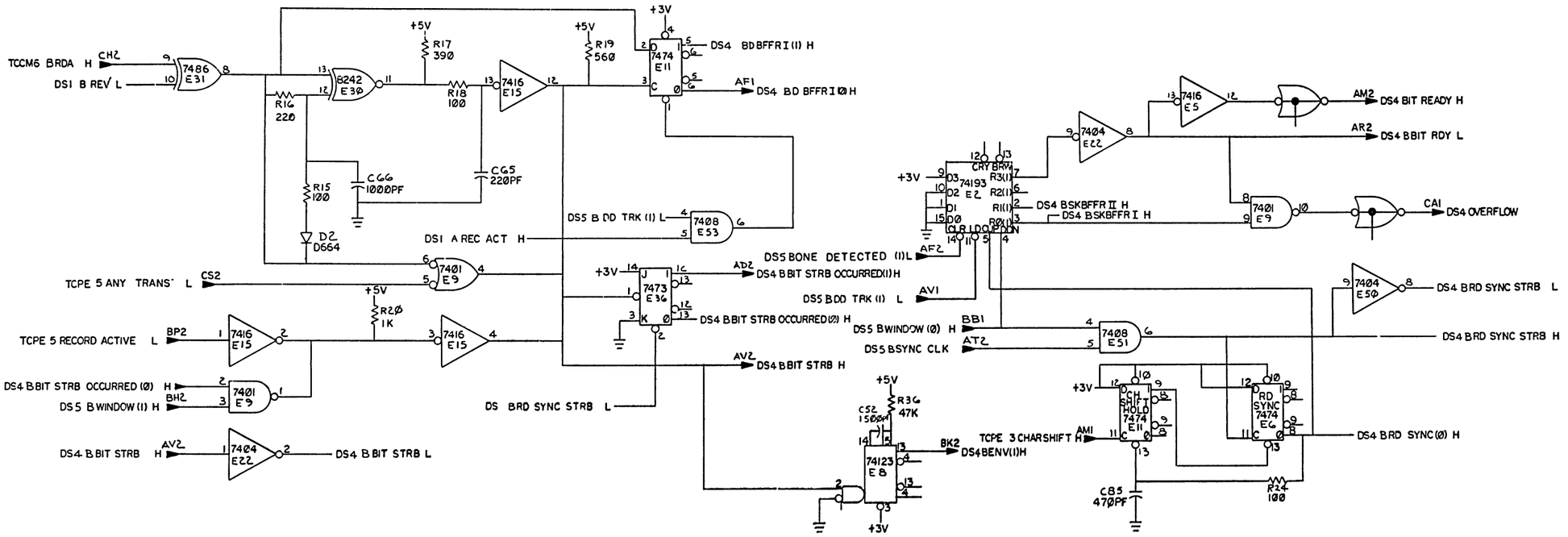
NOTES:
1 PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
MODULE IN SLOT 1 A IS BIT 2
MODULE IN SLOT 2 A IS BIT P
MODULE IN SLOT 3 A IS BIT 7
EXAMPLE:
A RDA H E01 N1 RDA 2 H
A RDA H E02 N1 RDA P H } SEE NOTE 2.
A RDA H E03 N1 RDA 7 H
2 M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND CNE DD TRK H BM2 → 7408 E13 ← CR2 DS3 ADD TRK (1) H
→ BL2 DS3 A BFFR A (1) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
TCCM7 PES B H CBI → 7431 E24 → CHI DS3 A RDB L
DS3 A DD TRK (1) L
DS3 ABFFR A(0) H → 7400 E25 ← DS3 ABFFR B(1) H
7401 E35 → AS2 DS3,5,7 POST DETECT H
→ BSI DS3 A POST PAT L
TCPE 3 CHAR SHIFT H AMI
TCPE 5 POST OR REC NACT L BKI
DS3 A SKEW BUFF DATA (1) H
DS2 A D BUFFRI (1) H
DS3 A WINDOW (0) H CCI
74172 E26
DS2 A BIT STRB OCCURRED (0) H
DS3 A SKEW BUFF B SO (0) H
7476 E33 → DS3 A ONE DETECTED (1) H → BV2 DS3 A ONE DETECTED (1) L
DS DROPPED BIT 74174 E10
REC ACT H → AUI DS3 A DROPPED BIT (1) H
7400 E48
74197 E34
DS3 A ONE DETECTED (1) H
DS3 A WINDOW (1) H CRI
TCPE4 RD ADDR 1 (1) H
TCPE4 RD ADDR 2 (1) H
TCPE4 RD ADDR 3 (1) H
BT2 BUI BV2
DS2 A BIT STRB OCCURRED (1) H
ENVELOPE 7474 E37
DS3 A WINDOW (0) H CCI
DS2 A RD SYNC STRB H
DS1 A REC ACT H
DD TRK 7473 E49 CP1
DS3 ADD TRK (1) H
DS3 ADD TRK (1) L
CVI → DS3 A DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H BCI
DS2 A BIT STRB H
DS1 B READING H
DS3 A DD TRK (1) L
7473 E49
7408 E53
DS3 +5VCD
BVI → TEST POINT
+3V
CRI → DS3 A WINDOW (1) H
CCI → DS3 A WINDOW (0) H
7474 E32
R14 220
C75 .015μF
R9 2.7K
DV1 +15V
R22 100 1/2W
C76 220PF
C57 47PF
C58 47PF
Q1 DEC 7805
74197 E47
R7 3K
R8 1K
R10 5K
4044 E23
PHASE DETECTOR VI 4044 DF E23 PU
VCO 4024 E16
C70 33UF
C78 3.9UF
C87 .01μF 50V
API → DS3 A SYNC CLK
DS2 A BIT STRB L
DS2 A DATA HALF H
7450 E39
CUI → TEST POINT
DS3 AQUIET GND

DATA BIT A

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS3)	D	CS	M8901-YB-1	K
SCALE	SHEET 3 OF 7	DIST.		



NOTES:

1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 B IS BIT Ø
   MODULE IN SLOT 2 B IS BIT 5
   MODULE IN SLOT 3 B IS BIT 1
   EXAMPLE:
   B RDA H – EØ1 H2 = RDA Ø H
   B RDA H – EØ2 H2 = RDA 5 H } SEE NOTE 2
   B RDA H – EØ3 H2 = RDA 1 H
2. M89Ø1 MODULES ARE LOCATED IN SECTIONS C, D, E, F OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT B

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS4)	D	CS	M8901-YB-1	K
SCALE	SHEET 4 OF 7	DIST.		

M8901-YB-1 REV K

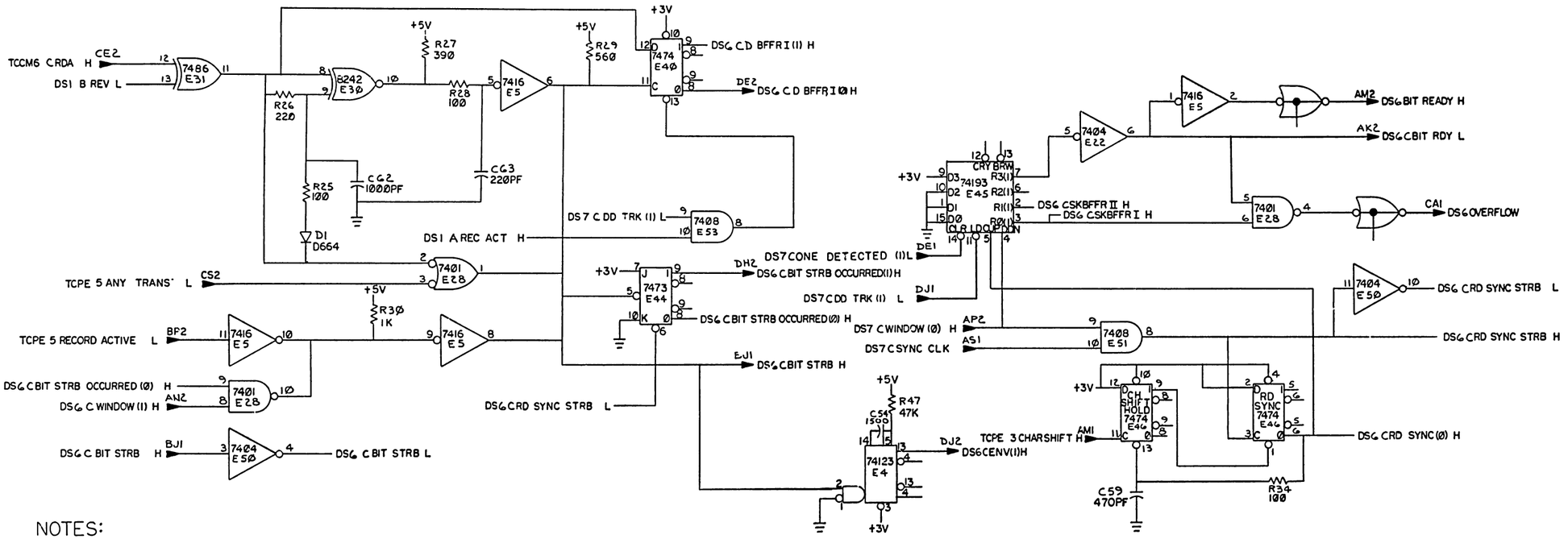
TCPE 2 PERR AND ONE DD TRK H
DS5 BDD TRK (1) H
7408 E13
BM2
BE2
BH1 DS5 B BFFR A (1) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
AMI
BKI
CBI
TCCM7 PES B H
DS5 B D D TRK (1) L
AVI
7401 E24
7401 E9
7400 E25
DS5 B BFFR A (0) H
DS5 B BFFR B (1) H
CM2 DS5 B RDB L
AS2 DS3,5,7 POST DETECT H
BRI DS5 B POST PAT L
DS5 B SKEW BUFF DATA (1) H
DS4 B D BFFRI (1) H
DS4 B BIT STRB OCCURRED (0) H
74172 E20
IDA IDB IGW CLK
IQA IQB
DS5 B SKEW BUFF B SO (0) H
DS5 B WINDOW (0) H
BBI
+3V
7475 E33
DS5 B ONE DETECTED (1) H
DS5 B ONE DETECTED (1) L
AF2
DS1 B REC ACT H
DROPPED BIT FF E10
DS5 B DROPPED BIT (1) H
AE1
7400 E48
74197 E12
R3(1) R2(1) R1(1) R0(1)
DS5 B ONE DETECTED (1) H
DS5 B WINDOW (1) H
BH2
TCPE4 RD ADDR 1 (1) H
TCPE4 RD ADDR 2 (1) H
TCPE4 RD ADDR 3 (1) H
BT2
BU1
BU2
DS4 B BIT STRB OCCURRED (1) H
AD2
ENVELOPE 7474 E6
DD TRK 7473 E18
BE2 DS5 B DD TRK (1) H
DS5 B DD TRK (1) L
AVI
DS4 B RD SYNC STRB H
TCPE 5 REC ACT H
ANI
BL1 DS5 B DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H
BCI
7473 E18
DS4 B BIT STRB H
DS1 B READING H
DS5 B +5V DC
AC1 TEST POINT
R42 220
C83 .015μF
R23 2.7K
DV1 +15V
R40 100 ½W 5%
C81 220PF
C68 47PF
C61 47PF
Q2 DEC 7805
C74 .33μF
C79 3.9μF
4044 E43
PHASE DETECTOR V1 4044 OF E43 PU
PD UF R1
R21 3K
R37 1K
5K R38
C82 .01μF 50V
VCO 4024 E38
74197 E3
R3(1) R2(1) R1(1) R0(1)
7474 E7
BH2 DS5 B WINDOW (1) H
BB1 DS5 B WINDOW (0) H
AT2 DS5 B SYNC CLK
DS5 B QUIET GND
7450 E21
DS4 B BIT STRB L
DS4 B DATA HALF H
BA1 TEST POINT

NOTES:
1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
MODULE IN SLOT 1 B IS BIT Ø
MODULE IN SLOT 2 B IS BIT 5
MODULE IN SLOT 3 B IS BIT 1
EXAMPLE:
B RDA H E01 H2 RDA Ø H)
B RDA H E02 H2 RDA 5 H) SEE NOTE 2.
B RDA H E03 H2 RDA 1 H)
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT B

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS5)	D	CS	M8901-YB-I	K
SCALE	SHEET 5 OF 7	DIST.		



NOTES:

1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H-E01 E2=RDA 4 H)
   C RDA H-E02 E2=RDA 6 H) SEE NOTE 2
   C RDA H-E03 E2=RDA 3 H)
2. M8901 MODULE ARE LOCATED IN SECTIONS C.D.E.F. OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT C

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS6)	D	CS	M8901-YB-1	K
SCALE	SHEET 6 OF 7	DIST.		

M8901-YB-1 REV. K
DCS
B

NOTES:
1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H E01 E2 RDA 4 H
   C RDA H E02 E2 RDA 6 H } SEE NOTE 2
   C RDA H E03 E2 RDA 3 H
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/12 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND CNE DD TRK H
DS7 C DD TRK (1) H
7408 E13
BM2
DF2
BM1
DS7 C BFFR A (1) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
CLR
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
AM1
BK1
TCCM7 FFS B H
CB1
7401 E24
CJ1
DS7 C RDB L
DS7 C DD TRK (1) L
DJ1
DS7 C BFFR A (0) H
DS7 C BFFR B (1) H
7400 E25
7401 E28
AS2
DS3 5, 7 POST DETECT H
EJ2
DS7 C POST PAT L
DS7 C SKEW BUFF DATA (1) H
DS6 C D BUFFRI (1) H
DS6 C BIT STRB OCCURRED (0) H
DS7 C WINDOW (0) H
AP2
74172 E29
DS7 C SKEW BUFF B SO (0) H
7476 E41
DS7 C ONE DETECTED (1) H
DS7 C ONE DETECTED (1) L
DE1
REC ACT H
DS7 C DFFFED BIT (1) H
CS1
7400 E48
+3V
74197 E42
DRIVEN BIT 74174 E10
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
TCPE4 RD ADDR 1 (1) H
TCPE4 RD ADDR 2 (1) H
TCPE4 RD ADDR 3 (1) H
BT2
DH2
DS6 C BIT STRB OCCURRED (1) H
ENVELOPE 7474 E40
DD TRK 7474 E41
DF2
DS7 C DD TRK (1) H
DS7 C DD TRK (1) L
DJ1
DS7 C WINDOW (0) H
DS6 C RD SYNC STRB H
DS1 A REC ACT H
DS7 C ONE DETECTED (1) H
DS7 C WINDOW (1) H
AN2
CU2
DS7 C DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H
BC1
7473 E44
DS6 C BIT STRB H
DS1 B READING H
DS7C45VCD
DP2
TEST POINT
R35 220
C69 .015
R33 2.7K
DV1
+15V
R46 100 1/2W
C72 220PF
C56 47PF
C55 47PF
Q3 DEC 7805
C77 33UF
C80 39UF
R31 3K
R43 1K
R44 5K
C73 .01
4044 E17
PHASE DETECTOR 4044 E17
VCO 4024 E16
74197 E1
7474 E7
AN2
DS7 C WINDOW (1) H
AP2
DS7 C WINDOW (0) H
AS1
DS7 C SYNC CLK
DS6 C BIT STRB L
DS6 C DATA HALF H
7450 E39
CT2
TEST POINT
DS7 C QUIET GND

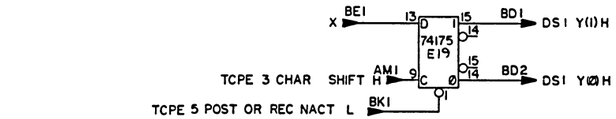
DATA BIT C

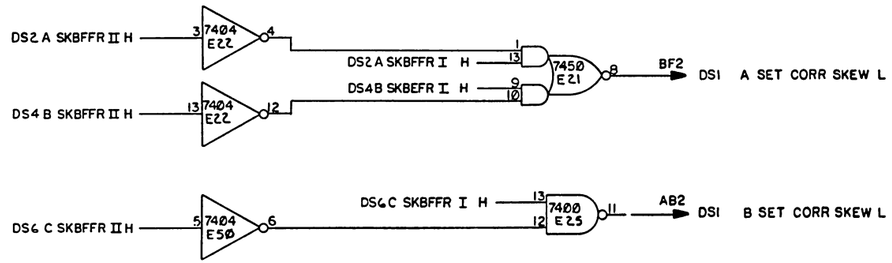
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS7)	D	CS	M8901-YB-I	K
SCALE	SHEET 7 OF 7	DIST.		

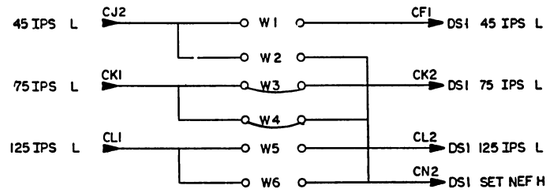
	SLOT 1	SLOT 2	SLOT 3
X	SINGLE DD TRK H		INC COND(1) H
Y (1) H	CER (1) H		INC DATA (1) H

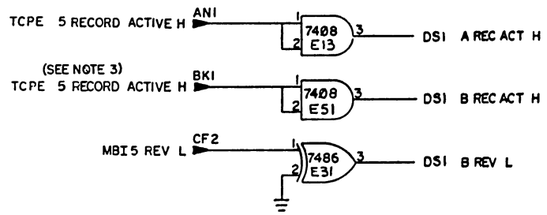
USE X.Y CHART TO DETERMINE INPUTS AND OUTPUTS OF 74175 FLOP.

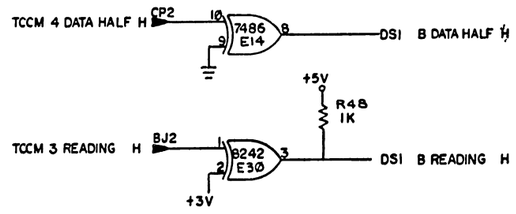


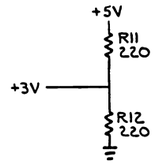


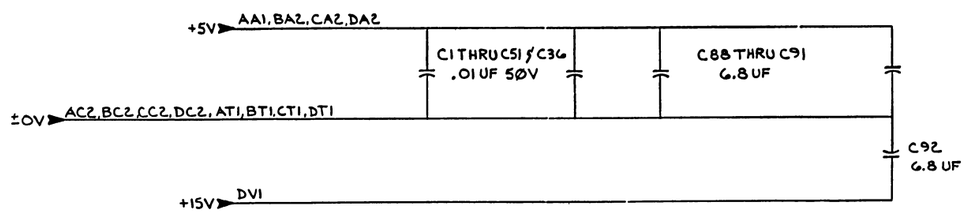
NOTES:
JUMPERS W1 THRU W6 INDICATE THE TAPE SPEED THE MODULE IS BUILT FOR. CHANGING THE JUMPERS DOES NOT CHANGE THE SPEED CAPABILITY OF THE MODULE.











NOTES

1. M8901 MODULES ARE LOCATED IN SECTIONS C,D,E,F OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.
2. PIN BK1 IS "TPCE 5 POST OR REC NACT L" ON ALL M8901'S WHEN IN TM02.

REVISIONS				
CHK	CHANGE NO.	REV.		
d/H	M8901 YC-WL003	L		
REVISED PER DRAWN			J. HESS	J. Hess mdc 11 Jan 74

DRN		12-1-78
CHK'D	J. HESS	12-1-78
ENG.	J. HESS	12-1-78
PROJ. ENG.		12-1-78
PROD.	J. HESS	12-1-78
NEXT HIGHER ASSY.		
SCALE		
SHEET	1 OF 7	

FIRST USED ON

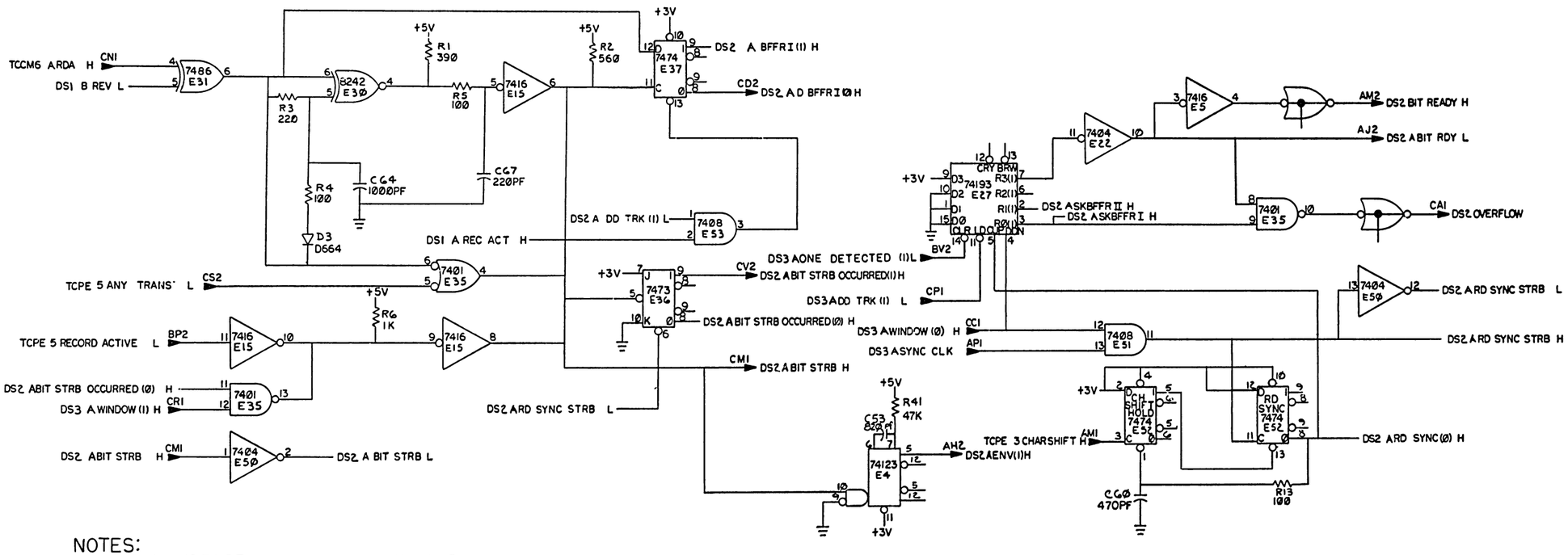
digital

TITLE: DATA SYNC (DSI)

SIZE	CODE	NUMBER	REV.
D	CS	M8901-YC-1	L

DIST.

M8901-YC-1 REV. L



NOTES:

1. PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 A IS BIT 2
   MODULE IN SLOT 2 A IS BIT P
   MODULE IN SLOT 3 A IS BIT 7

   EXAMPLE
   A RDA H – EØ1 NI = RDA 2 H
   A RDA H – EØ2 NI = RDA P H } SEE NOTE 2
   A RDA H – EØ3 NI = RDA 7 H
2. M89Ø1 MODULES ARE LOCATED IN SECTIONS C, D, E, F OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT A

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS2)	D	CS	M8901-YC-1	L
SCALE	SHEET 2 OF 7	DIST.		

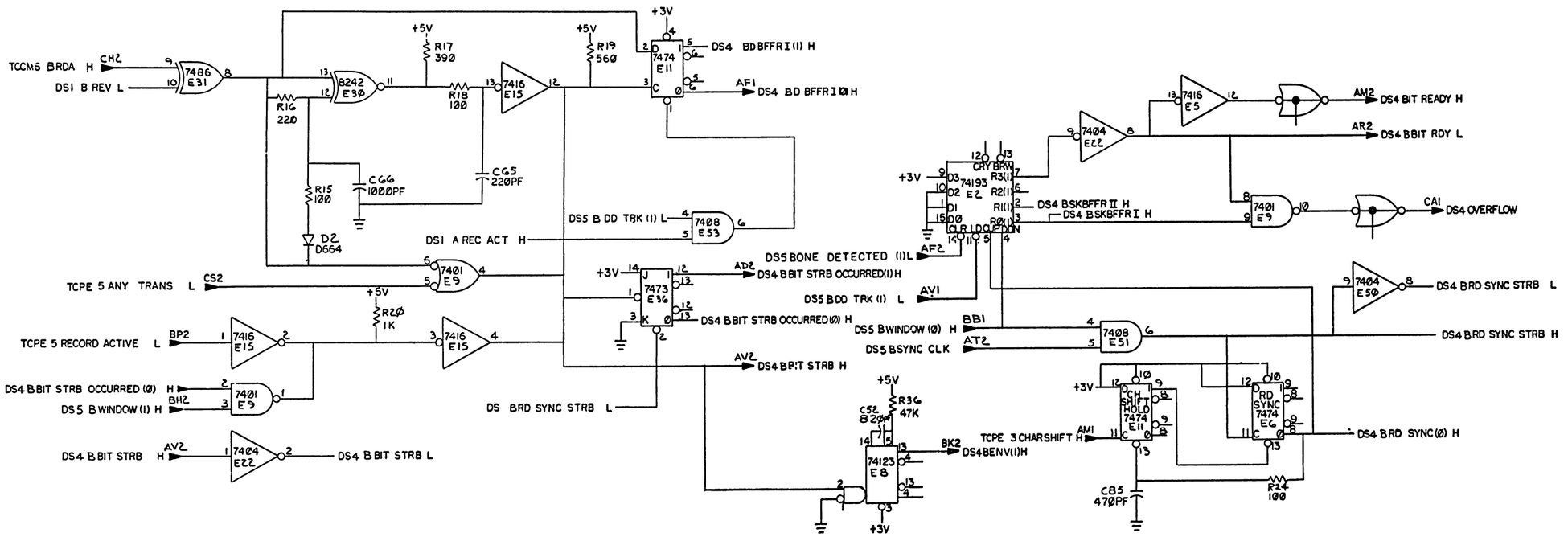
NOTES:
1 PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
MODULE IN SLOT 1 A IS BIT 2
MODULE IN SLOT 2 A IS BIT P
MODULE IN SLOT 3 A IS BIT 7
EXAMPLE:
A RDA H E01 NI RDA 2 H
A RDA H E02 NI RDA P H } SEE NOTE 2.
A RDA H E03 NI RDA 7 H
2 M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND ONE DD TRK H
DS3 ADD TRK (I) H
7408 E13
BL2 DS3 A BFFR A (I) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
CBI
TCCM7 PES B H
DS3 A DD TRK (I) L
7401 E24
CHI DS3 A RDB L
DS3 A BFFR A (Ø) H
DS3 A BFFR B (I) H
7400 E25
7401 E35
AS2 DS3,5,7 POST DETECT H
BSI DS3 A POST PAT L
TCPE 3 CHAR SHIFT H AMI
TCPE 5 POST OR REC NACT L BKI
DS3 A SKEW BUFF DATA (I) H
DS2 A D BUFFRI (I) H
DS3 A WINDOW (Ø) H CCI
7476 E33
DS3 A ONE DETECTED (I) H
DS3 A ONE DETECTED (I) L BV2
DS2 A BIT STRB OCCURRED (Ø) H
74172 E26
DS3 A SKEW BUFF B SO (Ø) H
DS3 A WINDOW (Ø) H CC1
+3V
REC ACT H
DS3 A DROPPED BIT (I) H AUI
7400 E48
DS ED BIT 74174 E10
TCPE 3 CHAR SHIFT H AMI
TCPE 5 POST OR REC NACT L BK1
74197 E34
R3(I) R2(I) R1(I) R0(I)
DS3 A ONE DETECTED (I) H
DS3 A WINDOW (I) H CR1
TCPE4 RD ADDR 1 (I) H BT2
TCPE4 RD ADDR 2 (I) H BU1
TCPE4 RD ADDR 3 (I) H BU2
+3V
DS2 A BIT STRB OCCURRED (I) H
ENVELOPE 7474 E37
DS3 A WINDOW (Ø) H CC1
DS2 A RD SYNC STRB H
DS1 A REC ACT H
DD TRK 7473 E49
CR2 DS3 ADD TRK (I) H
DS3 ADD TRK (I) L CP1
CVI DS3 A DATA SYNC (I) H
TCPE4 ENABLE SYNC (I) H BCI
7473 E49
DS2 A BIT STRB H
DS1 B READING H
DS3 A DD TRK (I) L
7408 F53
DS3 15VCD
BVI TEST POINT
+3V
7474 E32
CRI DS3 A WINDOW (I) H
CCI DS3 A WINDOW (Ø) H
+3V
R14 220
C75 .015 µF
R9 2.7K
DVI +15V
R22 100 1/2W
C76 150PF
C57 22PF
C58 22PF
Q1 DCC 7805
C70 33UF
C78 3.9UF
74197 E47
R3(I) R2(I) R1(I) R0(I)
PHASE DETECTOR VI 4044 DF E23 P1
R7 3K
R8 1K
R10 5K
4044 E23
VCO 4024 E16
C87 .01 µF 50V
API DS3 A SYNC CLK
+3V
DS2 A BIT STRB L
DS2 A DATA HALF H
7450 E39
CUI TEST POINT
DS3 AQUIET GND

DATA BIT A

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS3)	D	CS	M8901-YC-1	L
SCALE	SHEET 3 OF 7	DIST.		



NOTES:

1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 B IS BIT Ø
   MODULE IN SLOT 2 B IS BIT 5
   MODULE IN SLOT 3 B IS BIT 1
   EXAMPLE:
   B RDA H – EØ1 H2 = RDA Ø H
   B RDA H – EØ2 H2 = RDA 5 H } SEE NOTE 2
   B RDA H – EØ3 H2 = RDA 1 H
2. M89Ø1 MODULES ARE LOCATED IN SECTIONS C.D.E.F. OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT B

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS4)	D	CS	M8901-YC-1	L
SCALE	SHEET 4 OF 7	DIST.		

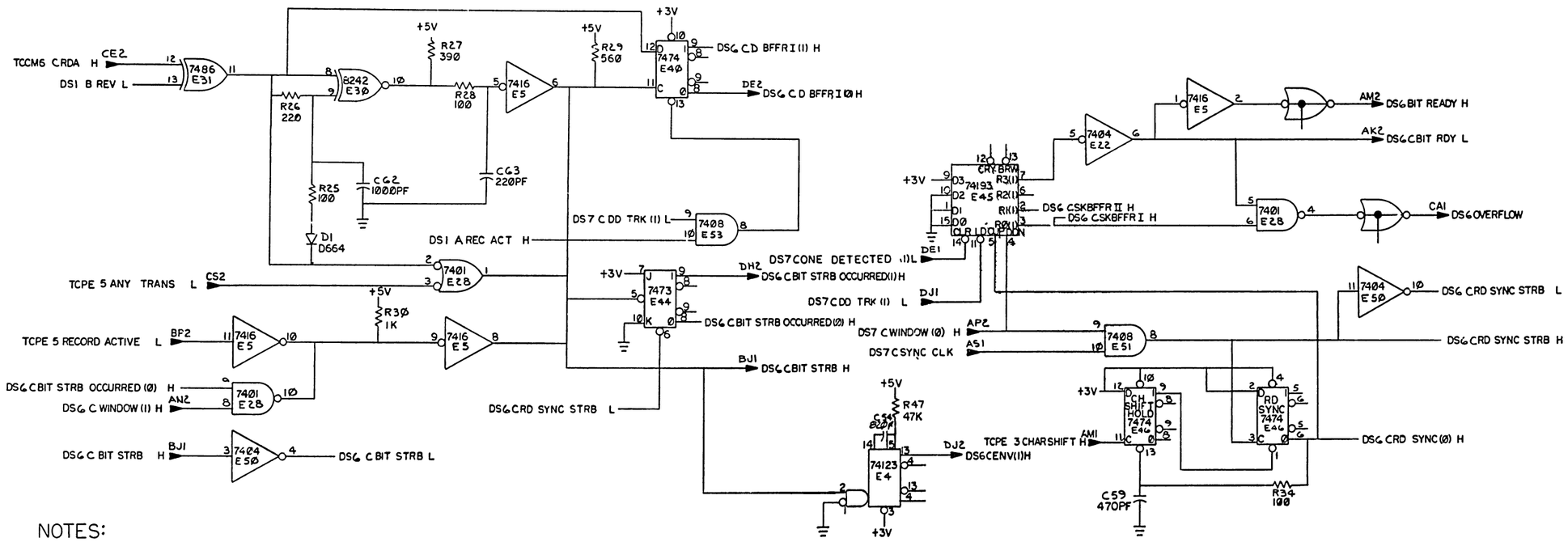
NOTES:
1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 B IS BIT Ø
   MODULE IN SLOT 2 B IS BIT 5
   MODULE IN SLOT 3 B IS BIT 1
   EXAMPLE:
   B RDA H E01 H2 RDA Ø H
   B RDA H E02 H2 RDA 5 H } SEE NOTE 2.
   B RDA H E03 H2 RDA 1 H
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE 2 PERR AND ONE DD TRK H BM2
DS5 BDD TRK (1) H BE2
7408 E13
BH1 DS5 B BFFR A (1) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
TCPE 3 CHAR SHIFT H AM1
TCPE 5 POST OR REC NACT L BK1
CBI
7401 E24
TCCM7 PES B H
AV1
DS5 B DD TRK (1) L
DS5 B BFFR A(Ø) H
DS5 B BFFR B'(1) H
7400 E25
7401 E9
CM2 DS5 B RDB L
AS2 DS3,5,7 POST DETECT H
BR1 DS5 B POST PAT L
DS5 B SKEW BUFF DATA (1) H
DS4 BD BFFR I (1) H
DS4 B BIT STRB OCCURRED (Ø) H
74172 E2Ø
IDA IDB IGW CLK IQA IQB
DS5 B WINDOW (Ø) H BB1
+3V
DS5 B SKEW BUFF B SO (Ø) H
DS4 BD BUFFR I (1) H
DS5 B WINDOW (Ø) H BB1
7476 E33
DS5 B ONE DETECTED (1) H
DS5 B ONE DETECTED (1) L AF2
DS1 B REC ACT H
DS5 B DROPPED BIT (1) H AE1
7400 E48
DROPPED BIT 74174 E1Ø
TCPE 3 CHAR SHIFT H AM1
TCPE 5 POST OR REC NACT L BK1
74197 E12
D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1)
DS5 B ONE DETECTED (1) H
DS5 B WINDOW (1) H BH2
TCPE4 RD ADDR 1 (1) H BT2
TCPE4 RD ADDR 2 (1) H BU1
TCPE4 RD ADDR 3 (1) H BV2
+3V
DS4 B BIT STRB OCCURRED (1) H AD2
ENVELOPE 7474 E6
DS5 B WINDOW (Ø) H BB1
DS4 B RD SYNC STRB H AN1
TCPE 5 REC ACT H
DD TRK 7473 E18
BE2 DS5 B DD TRK (1) H
DS5 B DD TRK (1) L
BL1 DS5 B DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H BC1
7473 E18
DS4 B BIT STRB H
DS1 B READING H
DS5 B +5V DC
R42 22Ø
C83 .015μF
DV1 +15V
R23 2.7K
R40 100 ½W 5%
C81 150PF
C68 22PF
C61 22PF
Q2 DEC 7805
4044 E43
PD UF
PHASE DETECTOR VI 4044 DF E43 PU
R21 3K
R37 1K
5K R38
VCO 4024 E38
C74 .33μF
C79 3.9μF
C82 .01μF 50V
74197 E3
R3(1) R2(1) R1(1) R0(1)
7474 E7
+3V
AC1 TEST POINT
BH2 DS5 B WINDOW (1) H
BB1 DS5 B WINDOW (Ø) H
AT2 DS5 B SYNC CLK
DS4 B BIT STRB L
DS4 B DATA HALF H
7450 E21
BA1 TEST POINT
DS5 B QUIET GND

DATA BIT B

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS5)	D	CS	M8901-YC-1	L
SCALE	SHEET 5 OF 7	DIST.		



NOTES:

1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H-E01 E2 = RDA 4 H
   C RDA H-E02 E2 = RDA 6 H } SEE NOTE 2
   C RDA H-E03 E2 = RDA 3 H
2. M8901 MODULE ARE LOCATED IN SECTIONS C, D, E, F OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT C

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS6)	D	CS	M8901-YC-1	L
SCALE	SHEET 6 OF 7	DIST.		

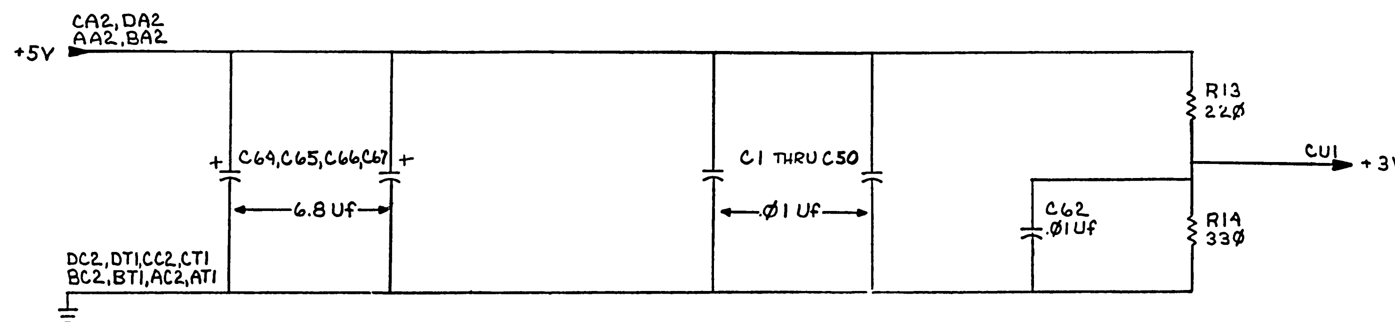
NOTES:
1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H E01 E2 RDA 4 H
   C RDA H E02 E2 RDA 6 H } SEE NOTE 2.
   C RDA H E03 E2 RDA 3 H
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TWO 3/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND ONE DD TRK H
DS7C DD TRK (1) H
7408 E13
BM2
DF2
BM1
DS7C BFFR A (1) H
7486 E14
BFFRA 74175 E15
BFFRB 74174 E10
CLR
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
AM1
BK1
TCCM7 FES B H
CB1
7401 E24
DS7C DD TRK (1) L
DJ1
DS7C BFFR A(0)H
DS7C BFFR B(1)H
7400 E25
7401 E28
CJ1
DS7C RDA L
AS2
DS3,5,7 POST DETECT H
BR2
DS7C POST PAT L
DS7C SKEW BUFF DATA (1)H
DS6C D BUFFR I (1) H
DS7C WINDOW(0) H
AP2
7476 E41
DS7C ONE DETECTED(1)H
DE1
DS7C ONE DETECTED(1) L
DS6C BIT STRB OCCURRED(0)H
DS7C BIT STRB OCCURRED(1)H
74172 E29
DS7C SKEW BUFF B SO (0) H
DS7C WINDOW (0) H
+3V
DS
REC ACT H
BIT 74174 E10
C51
DS7C DEFFERED BIT (1) H
7400 E48
74197 E42
DS7C ONE DETECTED(1)H
DS7C WINDOW (1) H
ANZ
TCPE4 RD ADDR 1 (1)H
TCPE4 RD ADDR 2 (1)H
TCPE4 RD ADDR 3 (1)H
BT2
BU1
BU2
DH2
ENVELOPE 7474 E40
DS6C RD SYNC STRB H
DS1A REC ACT H
DD TRK 7474 E41
DF2
DJ1
DS7C DD TRK (1) H
DS7C DD TRK (1) L
CU2
DS7C DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H
BC1
7473 E44
DS6C BIT STRB H
DS1B READING H
DS7C45VCD
DP2
TEST POINT
R35 220
C69 .015
R33 2.7K
+15V
DV1
R46 100 1/2W
C72 150PFF
C56 22PF
C55 22PF
Q3 DEC 7805
74197 E1
7474 E7
AN2
DS7C WINDOW(1)H
AP2
DS7C WINDOW(0)H
PD
PHASE DETECTOR 4044 E17
UF
DF
PU
R31 3K
R43 1K
R44 5K
4044 E17
VCO 4024 E16
C73 .01
C77 33UF
C80 39UF
AS1
DS7C SYNC CLK
DS6C BIT STRB L
DS6C DATA HALF H
7450 E39
CT2
TEST POINT
DS7C QUIET GND

DATA BIT C

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS7)	D	CS	M8901-YC-1	L
SCALE	SHEET 7 OF 7	DIST.		



REVISIONS		
REV	CHANGE NO.	CHK
B	M8932 00001	

DRN G HOBBS		FIRST USED ON	TM03
CHK'D		TITLE	TAPE CONTROL PHASE ENCODED (TCP-1)
ENG	1-21-77		
PROJ ENG	1-21-77		
PROD			
NEXT HIGHER ASSY	B-DD-M8932-Ø-Ø		
SCALE		SIZE D / CODE CS / NUMBER M8932-Ø-1	REV B
SHEET 1 OF 5		DIST	

digital

+5V
R8 1K
R9 220
C58 .01UF
DS 2,4,6 OVERFLOW A,B,C L
BV1
MR5 RDS H
BU1
DS2 INC DATA(1)H
DV1
7408 E45
7408 E38
TCPE2 9-DD TRK L
TCPE4 POST 42 H
7408 E18
TCPE4 CT5 H
TCPE4 CT4 H
TCPE4 3 ENV H
7400 E9
7402 E49
7402 E19
TCPE4 3 ENV.H
TCPE4 POST·20 L
7405 E43
BV2
TCPE2 PEF/LRC L
C54 1000 PF
R2 100
7474 E36 CRCE
MBI 5 SPACE L
CF2
7401 E27
AD2
TCPE2 ES/IL TMRK L
DS2 SET CORR SK 1 L
DS2 SET CORR SK 2 L
DS2 SET CORR SK 3 L
AT2
AU2
AV2
7410 E12
7402 E16
DS2 SET CORR SK 4 L
DS2 SET CORR SK 5 L
DS2 SET CORR SK 6 L
AR2
AR1
AV1
TCCM7 PESB H
BB1
+3V
7405 E43
DV2
TCPE2 CORR/CRCE L
MR5 RDS H
DS2 CER(1)H
TCCM 4 ERROR RESET(1)L
DL1
CL2
7408 E45
TCPE4 INC/VPE(Ø)H
7408 E26
TCPE2 ANY DD TRK H
MBI 5 SPACE L
CF2
AC1
TCPE2 FORMAT ERROR(1) H
TCCM 7 PESB H
BB1
TCPE 3 LATCHED PE WRT CLK L
7400 E37
7474 E36 FORMAT ERROR
7401 E27
DF1
TCEE2 INC/VPE
7410 E15
7474 E36 INC/VPE
TCPE2 INC/VPE(Ø) H
TCCM 4 ERROR RESET(1)L
CL2
TCPE4 POST·Ø-37 H
7400 E25
BF1
TCPE2 ONE READ H
DS2 D BFFR I 2(1)L
DS4 D BFFR I Ø(1)L
DS6 D BFFR I 4(1)L
DS2 D BFFR I P(1)L
DS4 D BFFR I 5(1)L
DS6 D BFFR I 6(1)L
DS2 D BFFR I 7(1)L
7430 E24
DS4 D BFFR I 10(1)L
DS6 D BFFR I 30(1)L
7408 E34
DS3 BFFR A(1)2H
DS5 BFFR A(1)ØH
DS7 BFFR A(1)4H
DS3 BFFR A(1)PH
DS5 BFFR A(1)5H
DS7 BFFR A(1)6H
DS3 BFFR A(1) 7H
DS5 BFFR A(1) 1H
DS7 BFFR A(1) 3H
7418Ø E23 PARITY GEN/CHK
ODD OUTPUT
EVEN INPUT
7484 E35
7402 E16
7408 E38
MR5 IRD H
7404 E35
7400 E37
BJ1
TCPE2 PERR L
BK1
TCPE2 PERR & ONE DD TRK H
CJ2
TCPE2 INC COND H
TCPE2 PERR H
7404 E47
DU2
TCPE2 SINGLE DD TRK H
DL2
TCPE2 Ø DD TRK L
CH1
TCPE2 MULT DD TRK L
DM1
TCPE2 SINGLE DD TRK L
7400 E-25
CR1
TCPE2 ANY DD TRK H
DS3 DD TRK 7(1)H
DS7 DD TRK 6(1) H
DS5 DD TRK 5(1)H
DS7 DD TRK 4(1) H
DS3 DD TRK P(1) H
DS7 DD TRK 3(1)H
DS3 DD TRK 2(1) H
DS5 DD TRK 1(1) H
DS5 DD TRK Ø (1) H
6306 E46
ME1
TCPE 2 9-DD TRK L

PE READ DATA ERRORS

REVISIONS		
NO	CHANGE NO	DEV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL PHASE ENCODED (TCPE2)	D	CS	M8932-Ø-1	B
SCALE 1-1/2 SHEET 2 OF 5	DIST			

WRITE MAJOR STATES

TCPE 3 POSØ(1) L
TCPE 3 ONES L
TCPE 3 DATA(1) L
7410 E15
TCPE 3 PREØ(1) L
7404 E35
7440 E1
R1 100
C53 220PF
BB1
TCCM7 PESB H
7400 E32
B31 TCPE 3 PE WRT CLK ENB1 (1)
7400 E31
TCPE 3L TCHED PE WRT (1)
7400 E31
TCPE 3L TCHED PE WRT CLK L
TCPE3 CLR PE STATES L
+3V
7474 E4
AM2 TCPE 3 PØS Ø (1) H
AP2 TCPE 3 POS Ø (Ø) H
7420 E2
7400 E2
TCCM 4 ST CLK H BR2
TCCM 3 EIGHTY L BC1
MB1 5 WFMK L AF2
TCCM 3 FORTY H BD2
7408 E18
7402 E3
TCCM 3 TP1WIP(1)H AF1
7427 E5
TCPE 3 PREØ(1) H
7408 E45
TCPE 3 DATA (1) H AB2
TCCM 4 WDR(1)H CD2
7400 E2
TCPE3 PRE1 (1) L
7400 E2
TCCM 4 WDR(1)L CE2
TCPE 3 DATA (1)H
7408 E34
74175 E14
PREØ D3 R3(1) R3(Ø)
PRE 1 D2 R2(1) R2(Ø)
DATA D1 R1(1) R1(Ø)
POS 1 DØ RØ(1) RØ(Ø)
CLR CLK
TCPE 3 PREØ(1) H
BL2 TCPE 3 PREØ(1)L
7408 E34
AL2 TCPE3ONES L
TCPE3 PRE1(1)L
AB2 TCPE 3 DATA(1) H
AD1 TCPE 3 DATA(Ø)H
TCCM 7 PESB L BD1
TCCM 3 ACCL H AA1
7402 E3
TCPE3 CLR PE STATES L

PE READ DATA STROBE GENERATOR

74197 E50 4 BIT BIN CNTR
D3 D2 D1 DØ R3(1) R2(1) R1(1) RØ(1)
CLR LD CLK1 CLKØ
TCPE 3 RDSD 2 H
TCPE 3 RDSD Ø H
7408 E31
TCPE 5 CLR READ STATES L
TCPE 5 INIT AND DS PLS L
+3V
7474 E8
TCPE 3 ENBL RDS(1)L
7402 E19
TCPE 3 RDS 3 H
7401 E27
CV2 TCPE 3 RDS L
TCPE 5 DLYD POST L
R19 100
C68 120PF
DU1
7408 E45
DS3 SYNC CLK P L
+5V
R3 330
DS BIT RDY H AV1
E9 7400
7437 E10
AM1 TCPEB CHAR SHIFT H
TCPE 3 CHAR SHIFT L

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	
TAPE CONTROL (TCPE3) PHASE ENCODED	D	CS	M8932-Ø-1	B
SCALE —	SHEET 3 OF 5	DIST		

DESKEW BUFFER READ ADDRESS COUNTER

+3V
74161 E7 4-BIT BIN CNTR
ENBCN RCRY D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK ENBCR
AK2 → TCPE4 RD ADDR 3 H
AE2 → TCPE4 RD ADDR 2 H
DT2 → TCPE4 RD ADDR 1 H
TCPE3 CHAR SHIFT L
TCPE5 RECORD ACTIVE H
AL1
+3V

IDB TIMER

+5V
R7 470 R5 470 R6 470 R11 470
256X4 PROM 6300 E20
TCPE4 CT Ø H
TCPE4 CT 1 H
TCPE4 CT 2 H
TCPE4 CT 3 H
TCPE4 CT 4 H
TCPE4 CT 5 H
TCPE4 CT 6 H
TCPE 5 DLYD POST L
ME1
C57 1500 pf C55 1500 pf C56 1500 pf C6Ø 1500 pf
TCPE4 POST·Ø37 H
TCPE4 POST·2Ø L
TCPE4 POST·38 H
TCPE4 POST·42 H

BU2 → TCPE4 IDB H

IDENTIFICATION BURST

+3V
74161 E6 4-BIT BIN CNTR
ENBCN RCRY D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK ENBCR
TCPE 5 INIT 4DS PLS L
+3V

+3V
74161 E8 1412
TCPE4 CT1 H
TCPE4 CT Ø H
TCPE 3 CLR PE STATES L
AE1 → TCPE 4 ENABLE SYNC (1) H

512X4 PROM 6306 E13
DS3 ENV P (1) H
DS3 ENV 2 (1) H
DS3 ENV 7 (1) H
DS5 ENV Ø (1) H
DS5 ENV 5 (1) H
DS5 ENV 1 (1) H
DS7 ENV 6 (1) H
DS3 ENV 4 (1) H
DS7 ENV 3 (1) H
ME1
7402 E28
TCCM4 2ØØ BPI CLK H
CH2
7427 E16
BD1
TCCM7 PESB L
TCPE4 ID PATTERN L

74161 E21 4 BIT BIN CNTR *
D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK1 CLKØ
TCPE4 CT2 H
TCPE4 CT1 H
TCPE4 CT Ø H
TCPE4 CT6 H
R18 1ØØ
C69 12ØPF

TCPE5 POST + PRE H
TCPE4 TMRK PATTERN H
TCPE 5 PETMRK(1) H
7427 E8
TCPE 5 RECORD ACTIVE L
7400 E9
7408 E9
BH1 → TCPE4 3 ENV H
AK1 → TCPE4 ANY ENV H
TCCM7 PESB H
BB1

74197 E22 4 BIT BIN CNTR *
D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK1 CLKØ
TCPE4 CT5 H
TCPE4 CT4 H
TCPE4 CT3 H

DS5 ENV 5 (1) H
DS5 ENV 1 (1) H
DS5 ENV Ø (1) H
AH2 AJ1 AH1
7410 E12
7404 E35
7450 E3Ø
TCCM4 DATA HALF H
CP2
7408 E38
7404 E47
DB2 → TCPE4 TMRK PATTERN H
7402 E49
R17 1K
+5V
7405 E43
7405 E43
TCPE5 POSTAMBLE(1) L
TCPE3 RDS 3 H
7402 E49

DS3 ENV 2 (1) H
DS3 ENV 7 (1) H
DS3 ENV P (1) H
BB2 BH2 BE1
7410 E15
7402 E19
TCPE3 LTCHED PE WRT CLK H

TITLE	SIZE	CODE	A ABCN	REV
TAPE CONTROL (TCPE4) PHASE ENCODED	D	CS	M8932-Ø-1	B
SCALE — SHEET 4 OF 5	DIST			

READ MAJOR STATES

TCPE 4 POST·38 H → 7400 E25 → AB1 → TCPE5 MID POSTAMBLE (1) L

TCPE5 POSTAMBLE(1)H

TCPE4 CT3 H
TCPE5 RECORD ACTIVE H → 7408 E18

+5V R3 1K

POST DETECT A,B,C H → AS1

TCPE5 RECORD ACTIVE L → R12 220 → C61 .01UF

7402 E16 → 7400 E37 → TCPE 3 RDSD 2 H → 7474 E40 POSTAMBLE

TCPE4 TMRK PATTERN H → 7474 E29 PRE

TCPE5 PE TMRK(1) H
TCPE4 3 ENV H → BH1
TCPE5 PE TMRK(1) L

BE2 TCPE5 POSTAMBLE (1) L

CU1 → TCPE5 PREAMBLE (1) L

CS2 → TCPE5 ANY TRANS L

TCPE5 CLR READ STATES L

TCPE4 ID PATTERN L

MBIG DRV SET PLS H → AS2 → 7402 E28 → TCPE5 INIT +DS PLS L

TCPE5 REC ACTIVE(1) H
TCPE5 PE TMRK (1) L → 7408 E33

MBI4 INIT PLS H → DD1

TCPE3 CHAR SHIFT H → AM1 → 7402 E20

TCCM3 ACCLH → AA1

7400 E32 → AN1 → TCPE5 POST +PRE H

TCPE5 DLYD POST L

TCPE5 REC ACTIVE(1) H

TCPE5 POSTAMBLE(1) L → 7404 E35 → R10 150 → C59 T=100NS 1000 PF → 7404 E35

7437 E18 → AP1 → TCPE5 RECORD ACTIVE L

+3V → 7474 E39 RECORD ACTIVE

TCPE 5 PE TMRK (1) H
TCCM 3 READING H → BJ2

7405 E43 → CV1 → TCPE5 ENBL SHDN CNTR L

7437 E18 → AL1 → TCPE5 RECORD ACTIVE H

TCPE 3 LTCHED PE WRT CLK L
TCPE4 CT3 H → 7408 E33 → 7450 E38

TCPE 3 LTCHED PE WRT CLK H

TCPE5 POSTAMBLE (1) H
TCPE5 RECORD ACTIVE H → 7402 E49 → R14 150 → C63 1000 PF

+5V R4 1K

7545 1 E42 → BT2 → TCPE5 POST OR REC NACT L

TCPE5 PREAMBLE (1) L
TCPE5 PE TMRK (1) L → 7400 E32 → 7408 E33

TCPE 4 CT4 H
TCPE 4 CT2 H → 7408 E33

TCPE 5 PE TMRK(1)H → BB1
TCCM7 PESB H → 7451 E27 → DC1 → TCPE 5 TMRK L

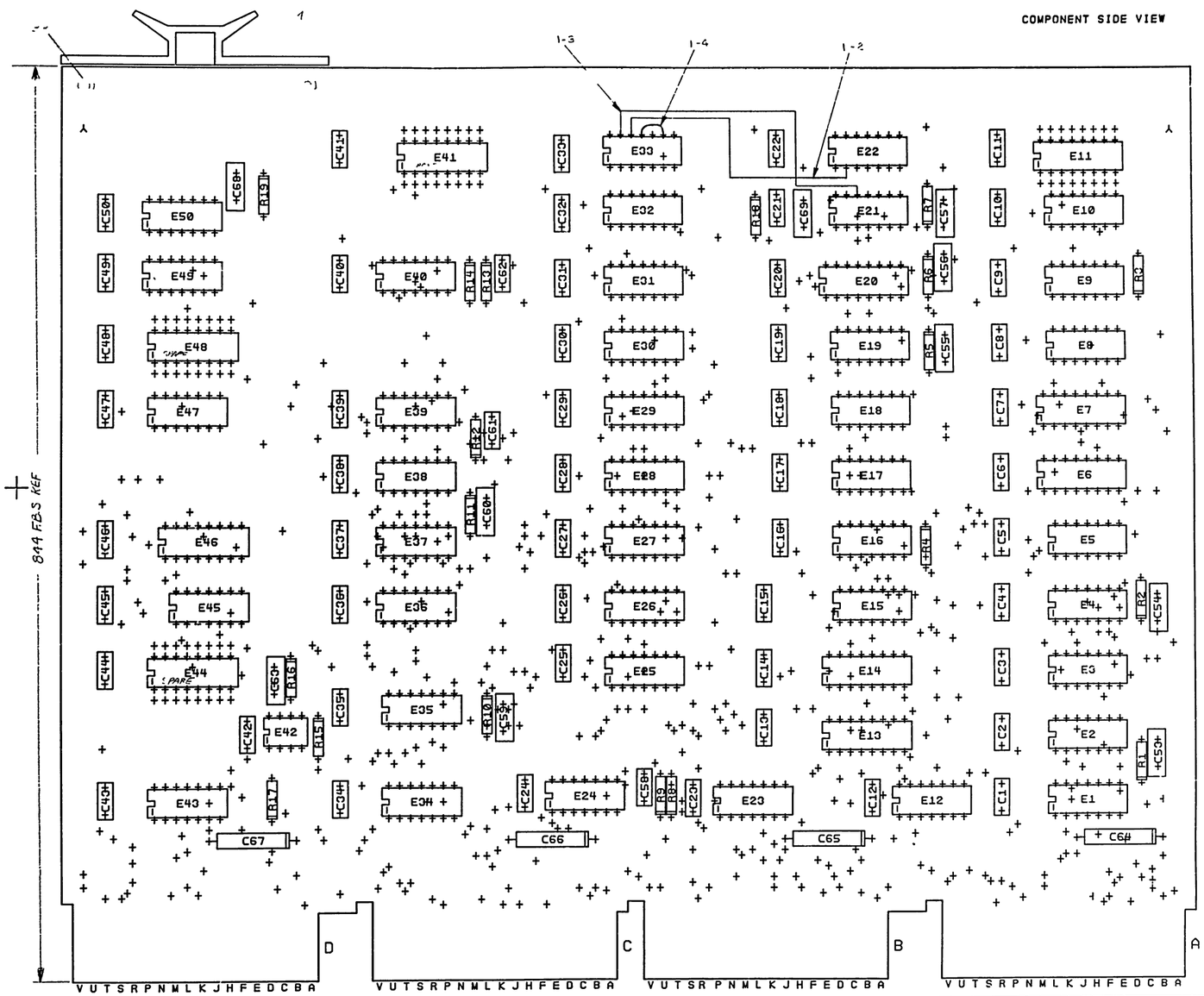
TCPE4 ANY ENV H → AK1 → 7405 E43 → CB2 → TCPE5 RS SHDN CNTR L

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
TAPE CONTROL PHASE ENCODED (TCPE5)	D	CS	M8932-Ø-1	B
SCALE — SHEET 5 OF 5	DIST			

REWORK INSTRUCTIONS
ECO #1
ETCH CUTS SIDE 2:
1-1. AT E22-2
WIRE ADDS SIDE 1:
1-2. FROM E22-2 TO E33-12
1-3. FROM E21-12 TO E33-13
1 4. FROM E33-11 TO E33-9

COMPONENT SIDE VIEW



NOTES:

CHK	CHANGE NO	REV
	M8932-1	B

SIGNATURES	DATE
DRN. S Kenyon	11/77
CHK'D.	
ENG. [illegible]	12/77
PROJ.ENG. [illegible]	12/77
PROD.	
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. [illegible]	

ETCH REV. B
P.C. DESIGN DATA BASE REV. B

digital

TITLE: TAPE CONTROL PE

SIZE	CODE	NUMBER	REV
D	UA	M8932-0-0	B

1 MS# 3114-

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Joan Rogers
DATE 28 July 76
ENG Jim Vagias
DATE 1-21-77

CHECKED G. Boseman
DATE 27 OCT 76
PROD G. Dillard
DATE 24 JAN 77

SECTION 1
ISSUED SECTION 1

NOTES:
USED ON OPTION/MODEL
TM03

ITEM NO	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION	REF DESIGNATION
	D-CS-M8932-Ø-1		CIRCUIT SCHEMATIC	REF	
	D-UA-M8932-Ø-Ø		UNIT ASSEMBLY	REF	
	B-DD-M8932-Ø		DWG DIRECTORY	REF	
1	D-MD-5012383-Ø-Ø		ETCHED CIRCUIT BD.	1	
2		10-00021-00	CAP 220 PF	1	C53
3		10-00054-00	CAP 1500 PF 250V DISC	4	C55,C56,C57,C60
4		10-00042-00	CAP 1000 PF MICA	3	C54,C59,C63
5		10-01610-01	CAP .01 MFD 100V 20% DISC	53	C1 thru C50, C58,C61,C62
6		10-05306-00	CAP 6.8 MFD 35V 10% S. TANT	4	C64,C65,C66,C67
7		13-00229-00	RES 100 ¼W 5%	4	R1,R2 ,R18,R19
8		13-00250-00	RES 150 ¼W 5%	2	R10,R16
9		13-00271-00	RES 220 ¼W 5%	3	R9,R12,R13
10		13-00295-00	RES 330 ¼W 5%	2	R3,R14
11		13-00365-00	RES 1K ¼W 5%	4	R4,R8,R15,R17
37		13-00316-00	RES 470 ¼W 5%	4	R5,R6,R7, R11
12		19-05547-00	I.C. DEC 7474	6	E4,E8,E29,E36,E39,E40
13		19-05575-00	I.C. DEC 7400	6	E2,E9,E25,E31,E32,E37
14		19-05576-00	I.C. DEC 74_0	2	E12, E15
15		19-05578-00	I.C. DEC 7430	1	E24

E.C.O. NO. 00001

TITLE: TAPE CONTROL PE

ASSY NO. D-UA-M8932-0-0
SHEET 1 OF 3

SIZE B | CODE PL | NUMBER M8932-Ø-Ø | REV. B

INSERTION PARTS LIST DATA BASE REV A

DRB 12.5

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Joan Rogers
DATE 28 July 76
ENG [signature]
DATE 1-21-77

CHECKED D. Brennan
DATE 27 OCT 76
PROD G. Dillard
DATE 24 JAN 77

SECTION 1
ISSUED SECTION 1

NOTES:
USED ON OPTION/MODEL
TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION	REF DESIGNATION
16		19-05579-00	I.C. DEC 7440	2	E1,E26
17		19-05580-00	I.C. DEC 7450	1	E30
18		19-05590-00	I.C DEC 7401	1	E27
19		19-09004-00	I.C. DEC 7402	5	E3,E16,E19,E28,E49
20		19-09686-00	I.C. DEC 7404	2	E35,E47
21		19-09930-00	I.C. DEC 7405	1	E43
22		19-10035-00	I.C. DEC 74197	3	E21, E22,E50
23		19-10091-00	I.C. DEC 7437	1	E10
24		19-10155-00	I.C. DEC 7408	5	E18,E33,E34,E38,E45
25		19-10406-00	I.C. DEC 75451	1	E42
26		19-10650-00	I.C. DEC 74161	2	E6,E7
27		19-10651-00	I.C. DEC 74175	1	E14
28		19-10724-00	I.C. DEC 74180	1	E23
29		19-10878-00	I.C. DEC 7427	2	E5,E17
30			SPARES 16 PIN I.C.	4	E11,E41,E44,E48
31		23-359A2-00	256 x 4 BIT PROM OPEN COLLECTOR	1	E20
32		23-409A9-00	512 x 4 BIT BIPOLAR, TRI-STATE	1	E13
33		90-06732-00	EYELET	8	
34		90-08337-06	HANDLE, FLIPCHIP, MAGENTA	4	

E.C.O. NO.

TITLE TAPE CONTROL PE

ASSY NO. D-UA-M8932-0-0

SHEET 2 OF 3

SIZE B | CODE PL | NUMBER M8932-Ø-Ø | REV. B

INSERTION PARTS LIST DATE REV A

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY Joan Rogers	CHECKED G. Bowman	SECTION 1
DATE 28 July 76	DATE 27 Oct 76	
ENG Jim Rogers	PROD N. Dillard	ISSUED SECTION 1
DATE 1-21-77	DATE 24 JAN 77	

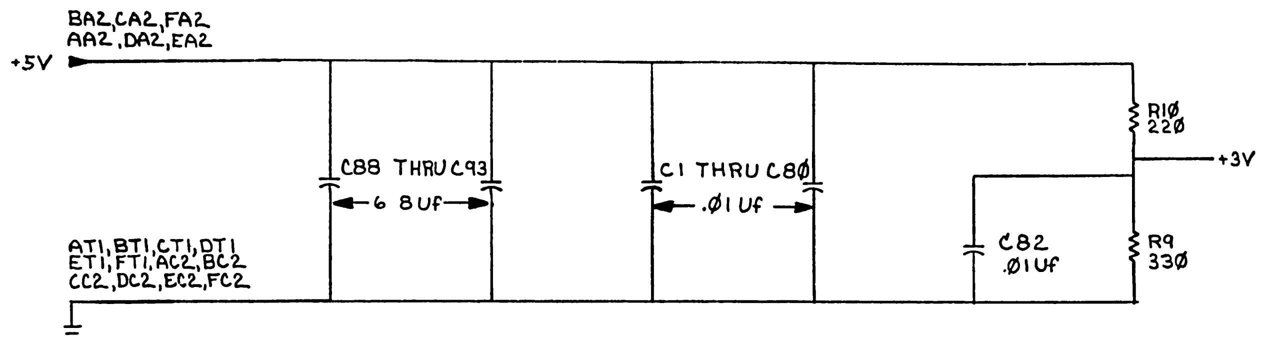
NOTES:

USED ON OPTION/MODEL TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
35		10-00018-00	CAP 120 PF 100V MICA	2	C68,C69
36		23-408A9-00	512 X 4 BIT BIPOLAR, TRI-STATE	1	E46
37		91-05740-55	WIRE 30AWG, GREEN	A/R	

E.C.O. NO.

TITLE: TAPE CONTROL PE	ASSY NO. D-UA-M8932-0-0	SIZE B	CODE PL	NUMBER M8932-Ø-Ø	REV. B
	SHEET 3 OF 3	INSERTION PARTS LIST DATA BASE REV			



74153 FUNCTION TABLE

SELECT INPUTS		DATA INPUTS				OUTPUT
S1	S0	A	B	C	D	F
L	L	L	X	X	X	L
L	L	H	X	X	X	H
L	H	X	L	X	X	L
L	H	X	H	X	X	H
H	L	X	X	L	X	L
H	L	X	X	H	X	H
H	H	X	X	X	L	L
H	H	X	X	X	H	H

NOTE
IF M8933 IS TO BE USED IN TMØ2 BACKPANEL IT WILL BE NECESSARY TO ADD A 7418Ø IC AT LOC E-41 M8933 IS NORMALLY BUILT FOR TMØ3 BACKPANEL WIRING AND WILL HAVE LOC E-44 EMPTY. FOR TMØ3 SIGNAL WDBFO P H IS WIRED ON BACKPANEL, FOR TMØ2 OPERATION THIS SIGNAL IS NOT USED

REVISIONS		
CHK	CHANGE NO.	REV.
	M8933-00001 J. VIGIAS	A
	M8933-00002 P. RAIKUNEN 19-APR-78	B

DRN. G.HOBBS	
CHK'D J. McFagen	11/3/76
ENG. Jim Vigias	2 FEB 77
PROJ. ENG. Jim Vigias	2 FEB 77
PROD. H. Diccard	2 Feb 77
NEXT HIGHER ASSY.	
B-DD-M8933-Ø	
SCALE	
SHEET 1 OF 7	

FIRST USED ON TMØ3

digital

TITLE
TAPE CONTROL COMMON MODE (TCCM2)

SIZE	CODE	NUMBER	REV.
D	CS	M8933-Ø -1	B

DIST.

WRITE MUX AND WRITE BUFFER

BFLR2, BF4 WDBFO7H — DN1 — CPI — CNRZ2 CRC7(I)H
BFLR2, BF4 WDBFO6H — DM1 — CM1 — CNRZ2 CRC6(I)H
BFLR2, BF4 WDBFO5H — DL1 — CL1 — CNRZ2 CRC5(I)H
BFLR2, BF4 WDBFO4H — DK1 — CK1 — CNRZ2 CRC4(I)H
BFLR2, BF4 WDBFO3H — DJ1 — CJ1 — CNRZ2 CRCØ(I)H
BFLR2, BF4 WDBFO2H — DV2 — CS1 — CNRZ2 CRC3(I)H
BFLR2, BF4 WDBFO2H — DE1 — CE1 — CNRZ2 CRC2(I)H
BFLR2, BF4 WDBFO1H — DP1 — CR1 — CNRZ2 CRC1(I)H
BFLR2, BF4 WDBFOØH — DJ1 — CJ1 — CNRZ2 CRCØ(I)H

74153 E34 · 74153 E25 · 74153 E33 · 74153 E26 · 74153 E36

74175 E35 · 74175 E27 · 74175 E28

TCCM2 WDWBO P(I)H — FJ2 — 7400 E79 — TCCm3 ID BURST TIME(I)H — TCPE3 ONES L — CL2 — 7400 E79 — TCCM2 PARITY DATA SET UP H

EF4 WDBFO2 H — DE1
BF4 WDBFO4 H — DK1
BF4 WDBFO6 H — DM1
7427 E42 · 7410 E43 · 7404 E31 — PVN ALL ZEROS H

BF4 WDBFOØ H — DU1
BF4 WDBFO3 H — DV1
BF4 WDBFO5 H — DL1
7427 E42

BF4 WDBFO7 H — DN1
BF4 WDBFO1 H — DP1
7427 E42

* M8914 PREFIX IS BFLR2,BF4 IS M8906 PREFIX

1 * SEE NOTE
74180 E41 — D0 D2 D4 D1 D7 D3 D5 D6 — EVEN OUT — ODD OUT — EVEN IN — ODD IN — PARITY TREE

MR6 PVN H — FA1
TCCM7 PESB L
7400 E69 · 7404 E51

MR5 INC. PREAMBLE L — AA1 — 7400 E29

BF4 WDBFO P H — CR2

TCPE3 ONES L — CL2 — 7400 E32 — TCCM2 ONES H

TCCM4 CRC STRB H — 7402 E45 — 7408 E44 — TCCM7 PESB H — TCCM4 PE CLK(I) L

TCPE3 DATA(I)H — CB2 — 7408 E44 — 7402 E45 — TCCM7 PESB L

7486 E29 — DR1 — TCCM2 XWDP H

DP2 — TCCM2 XWD4 H

BFLR2, BF4 WDBFO4H — DK1 — 7400 E29 — 8

CNRZ2 CRCP(I)H — CL1 — TCCM2 PARITY DATA SET UP H

TCCM2 DATA CLK H

TCCM4 WBCIK H — DH1 — TCCM2 CLR P WB L

FN1 — TCCM2 WDWBO 7(I)H
FL2 — TCCM2 WDWBO 6 (I)H
FK2 — TCCM2 WDWBO 5 (I)H
DF2 — TCCM2 WDWBO5(I) L
FF1 — WDWBO 4 (I)H
FR2 — TCCM2 WDWB O 3(I)H
FD1 — TCCM2 WDWBO 2 (I)H
FP1 — TCCM2 WDWBO 1 (I)H
FE1 — TCCM2 WDWBO Ø (I) H
FJ2 — TCCM2 WDWBO P (I) H

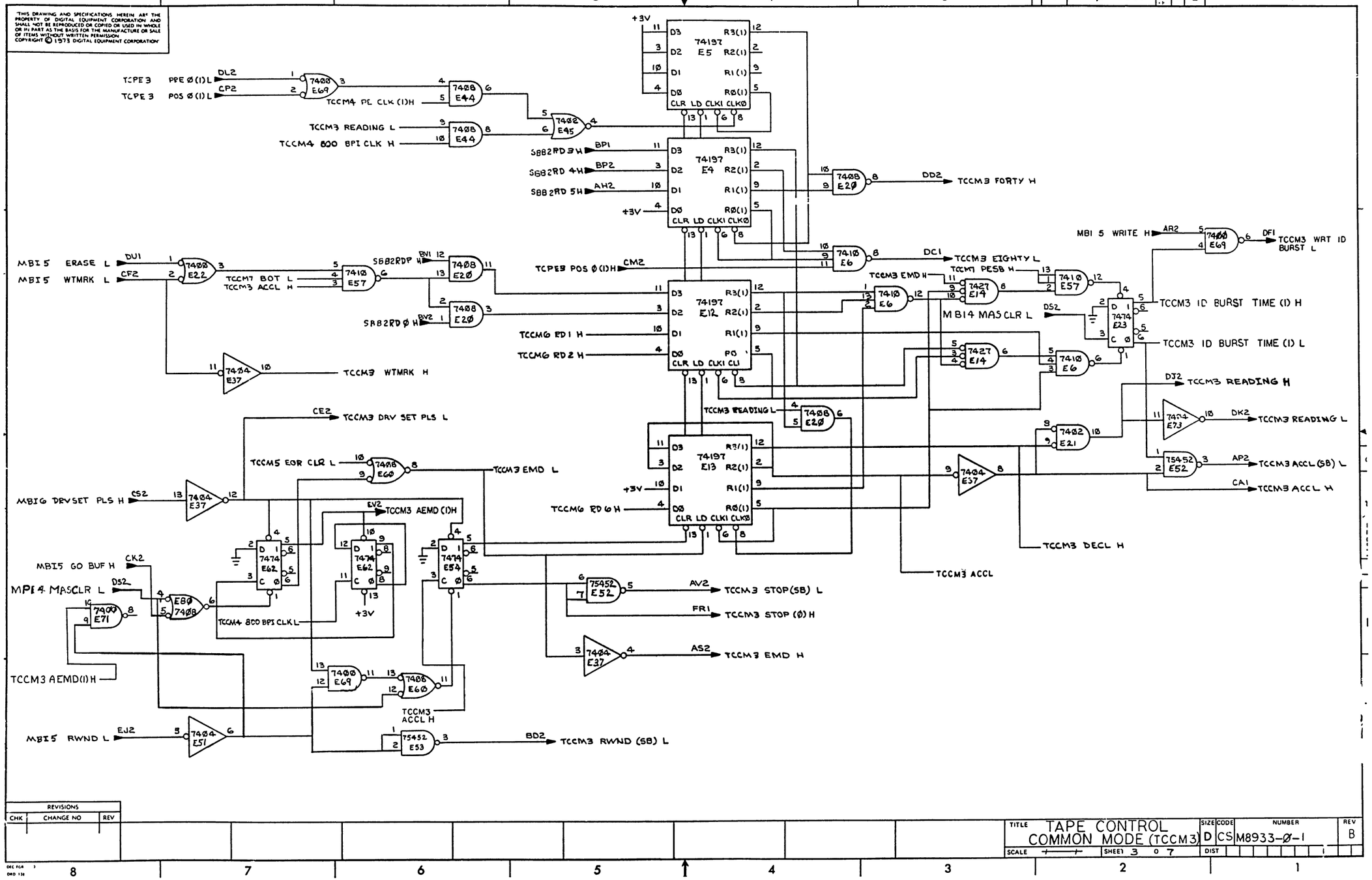
+3V
7474 E23 — MBI6 DRV SET PLS H — TCCM2 TMI(1)H — AB2 — TCCM2 TMI(Ø)H
TCCM4 CRC STRB + LRC STRB L
SBC2 7CH H — CUZ — 7400 E22 — AR1 — TCCM2 7CH TM 1
TCCM2 TMI(1)H
7400 E32 — BB2 — TCCM2 7CH TM Ø
TCCM7 7CH L

MBI5 WFMK L — CF2 — 7402 E21
TCCM 7 PESB H
7404 E31
MBI5 WRITE H — AR2 — 7408 E3Ø — 7408 E3Ø — TCCM2 CLR P WB L
TCCM4 LRC STRB(SB) L — AK2

TCCM3 ID BURST TIME (I) L — 7408 E3Ø

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL COMMON MODE (TCCM2)	D	CS	M8933-Ø-1	B
SCALE —	SHEET 2 OF 7	DIST		



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL COMMON MODE (TCCM3)	D	CS	M8933-Ø-1	B
SCALE	SHEET 3 0 7	DIST		

DEC FCR DRD 126

MBI5 WRITE H
MBI5 DATA XFER H
MBI6 DRV SET PLS H
TCCM4 WRT CLK H
MBI9 WRT END L
TCCM3 WTMRK H
TCCM7 PESB H
TCCM4 WB CLK L
TCCM3 WTMRK H
TCCM5 EORS L
TCCM7 PESB L
TCCM7 PESB L
TCCM4 WRT CLK L
TCPE 3 PE WRT CLK EBNL L
TCCM3 WTMRK H
SBC2 7CH H
TCCM4 WRT CLK H
TCCM2 DATA CLK H
SBB2 TAPE WRT CLK
MR5 MM CLK(1)H
MR5 WRP 2 L
MR5 WRP 1 L
MR5 WRP 3 L
TCCM3 DECL H
TCCM4 WRT CLK L
TCCM4 WRP 1,2,3 L
MR5 WRPØ + WRP 4 L
TCCM3 DRV SET PLS L
SBC2 MOL H
TCCM3 ACCL (SB) L
TCCM4 PE CLK (1) H
TCCM4 PE CLK (1) L
TCCM4 ST CLK L
TCCM4 MOL L
TCCM4 SLAVE SET PLS H
MBI5 ERASE L
MBI5 SPACE H
MBI6 DRV SET PLS H
MBI4 MAS CLR L
TCCM4 SPACE L
TCCM4 ERROR RESET (Ø) L
MBI4 MASCLR L
SBB2 CLOCK H
TCCM4 200 BPI CLK H
TCCM4 800 BPI CLK L
TCCM4 800 BPI CLK H
TCCM4 DATA HALF H
TCCM4 CRC STRB H
TCCM4 LRC STRB (SB) L
TCCM4 CRC STRB + LRC STRB L
TCCM4 WRT CLK ENBL L
TCCM4 WRT CLK ENBL H
TCCM4 REC (SB) L
TCCM4 WB CLK H
TCCM4 WRT STRB H
TCCM4 WB CLK L

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL (TCCM4) COMMON MODE	D	CS	M8933-Ø-1	Ø

SCALE — SHEET 4 OF 7 — DIST

GAP DETECTION TIMER

+3V
74161 E8 ENBCN RCRY D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK ENBCR
7400 E32
7473 E16 J K
+3V
TCCM4 WRT CLK ENBL L
7408 E30
TCCM4 200 BPI CLK H
7402 E38
TCCM3 READING L
MBI5 ERASE L DU1
7404 E78
TCCM3 DECL H
+5V R4 1K
TCPE4 & CNRZ4 ENBL SHDN CNTR L DV2
7432 E47
7427 E14
MBI 11 OPI(1) H DB2
7404 E51
MBI 4 MAS CLR L DS2
7402 E56
MBI 6 DRV SET PLS H CS2
7408 E80
TCCM4 200 BPI CLK H
7402 E47 R3 100
TCCM5 EOR PLS (1) L
+5V +3V
74123 1MSEC E61
R12 10K C85 560PF
+5V R7 470
TCPE4 & CNRZ4 RST SHDN CNTR L EB2
74197 E98 D3 D2 D1 D0 R3(1) R2(1) R1(1) P0(1) CLR LD CLK1 CLK0
7410 E57
7402 E47
TCCM5 EORS H
CV1 TCCM5 SHDN = 8 H
DN2 TCCM5 SHDN = 2 H
7404 E73
C81 120 PF
TCCM5 SHDN = 8 H
7404 E51
TCCM3 ACCL H CA1
7474 E55 D C
TCCM4 ERROR RESET C L EL2
MBI 5 WRITE H AR2
7408 E77
7404 E73
TCCM5 EORS L
MBI 11 OPI(1) H DT61
7422 E56
EV1 TCCM5 RECORD H
MR5 MAINT EOR L EF2
DE2
7408 E96
7408 E60
CH1 TCCM5 EOR L
TCPE5 POSTAMBLE(1) L
7432 E56
+3V
7474 E55
FN2 TCCM5 NSG(1) L
7400 E63
CF1 TCCM5 SET OPI L
TCCM3 DECL H
TCCM5 EOR PLS(1) L EF2
7408 E60
MR5 MAINT EOR L
TCCM5 EOR CLR L
+5V C87 6.8UF R8 1MEG C86 .01
555 E65 TRIG OUT 7-SEC CLR
MBI5 REWIND L EJ2
MBI6 DRV SET PLS H CS2
7410 E43
7404 E78
FU1 TCCM5 CLR OPI L
MBI11 OPI (1) H DB2
TCCM5 EOR L CH1
7402 E38
7404 E78
MBI4 MAS CLR L DS2
7408 E80
TCCM3 READING L
SBB2 BOT H BH2
7474 E29
FU2 TCCM5 1 SEC DLY TO L→H

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL COMMON MODE (TCCM5)	D	CS	M8933-Ø-1	5
SCALE —	SHEET 5 OF 7		DIST	

SBB2 RD7(SB) L — AE2 — 8640 E2 — TCCM6 RD 7 H — 74157 E74 B2 f2 A2 SØ STB — FE2 — TCCM6 RDA7
TCCM2 WDWBO 7 (1) H

SBB2 RD6(SB) L — AF2 — 8640 E2 — TCCM6 RD 6 H — 74157 E7A BØ fØ AØ SØ STB — EU2 — TCCM6 RDA6
MBI5 WFMK L — CF2 — 74ØB E77
TCCM2 WDWBO 6(1) H — FL2

SBB2 RD5 H — AH2 — 74157 E76 BØ fØ AØ SØ STB — ET2 — TCCM6 RDA5
TCCM2 WDWBO 5(1)H

SBB2 RD4 H — BP2 — 74157 E74 B1 f1 A1 SØ STB — ER2 — TCCM6 RDA4
CWD2 WD4 H — BB1 — 8640 E7Ø

SBB2 RD3 H — BP1 — 74157 E74 B3 f3 A3 SØ STB — FH2 — TCCM6 RDA3
CWD2 WD3 H — BL2 — 8640 E17

SBB2 RD2(SB) L — BS2 — 8640 E18 — TCCM6 RD2H — 74157 E 76 B1 f1 A1 SØ STB — EM2 — TCCM6 RDA2
TCCM2 WDWBO2(1)H

SBB2 RD1(SB) L — BU2 — 8640 E17 — TCCM6 RD1H — 74157 E 76 B3 f3 A3 SØ STB — FF2 — TCCM6 RDA1
TCCM2 WDWBO1 (1)H

SBB2 RDØ H — BV2 — 74157 E 76 BØ fØ AØ SØ STB — EN2 — TCCM6 RDAØ
TCCM2 WDWBO Ø(1)H

SBB2 RDP H — BV1 — 74157 E75 BØ fØ AØ SØ STB — ES2 — TCCM6 RDAP
TCCM2 WDWBO P (1) H

SBB2 RSDO(SB) L — AL1 — 8640 E1 — DB1 — TCCM7 PES B H — R2 150 — C83 1ØØØPF — 74157 E75 B1 f1 A1 SØ STB — FS2 — TCCM6 RSDO H
TCCM4 REC (SB) L — BK2 — 8640 E17

WRPØ + WRP4 L — FM2

+5V — R11 10K — C84 56ØpF — 75452 EG4 — AS2 — TCCM3 FMD H — 74123 EG1 — +2V

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL (TCCM6) COMMON MODE	D	CS	M8933-Ø-1	6
SCALE —	SHEET 6 OF 7	DIST		

SN,DS REGISTER MUX

SBB2 BOT H — BH2 — 8640 E2 — BH1 — TCCM7 BOT L

+5V — R13 1K — 7404 E73 — CU1 — TCCM7 TMRK H

TCPE4, CNRZ4 TMRK L — FL1

SB SLA H — BF2

SBC2 SN0 (SB) L — AD1 — 8640 E1

SBC2 SN01 (SB) L — AU2 — 8640 E9

SBC2 SN2 (SB) L — BJ1 — 8640 E18

TCPE4 IDB H — DU2

SBC2 SN3 (SB) L — AL2 — 8640 E2

8234 E67: A0 B0 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

EU1 — * TCCM7 CMUX 7

ES1 — TCCM7 CMUX 1

ER1 — TCCM7 CMUX 2

EP1 — TCCM7 CMUX 3

FD2 — TCCM7 SDWN L

MB1 5 SPACE H

MB15 GO BUF H

SBC2 SDWN H — AM2 — 7402 E71

LD' — TCCM7 PES B L

+5V — R4 1K — DB1 — TCCM7 PES B H

SB PES (SB) L — BJ1 — 8640 E18 — 75452 E19 — 75452 E53

SBC2 SN4 (SB) L — AE1 — 8640 E1

SBC2 SN5 (SB) L — AN1 — 8640 E9

SBC2 SN6 (SB) L — BT2

MB15 GO L — FL1

SBC2 SN7 (SB) L — AV1 — 8640 E9

SBB2 CET SSC H — BN2 — 7404 E73

7474 E72: D 1 C Ø 2 3 4 5 6

FS1 — TCCM7 SSC (1) L

MB14 MAS CLR L — DS2

8234 E68: A0 B0 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

SBC2 DT Ø H — BJ2

SPC2 DT 1 H — AH1

SBC2 DT 2(SB) L — BL1 — 8640 E18

+3V

MB12 RG L — FJ1

8234 E58: A0 B0 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

EN1 — CMUX 4

EM1 — TCCM7 CMUX 5

EL1 — TCCM7 CMUX 6

EK1 — TCCM7 CMUX 7

8234 E11: Aϕ Bϕ A1 B1 A3 B3 A2 B2 S1 S0 — fϕ f1 f3 f2

SBC2 SN8 (SB) L — AF1 — 8640 E1

SBC2 SN9 (SB) L — BD1 — 8640 E9

SBB2 END PT H — BR1

SBC2 SN10 H — BS1

SBC2 WRL H — BM2

SBC2 SN11 (SB) L — BC1 — 8640 E10

8234 E59: A0 B2 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

EJ1 — TCCM7 CMUX 8

EH1 — TCCM7 CMUX 9

EF1 — TCCM7 CMUX 10

EE1 — TCCM7 CMUX 11

DT2 — 7403 E96 — CH2

BR2

7402 E66 — 7404 E51 — DH2 — TCCM7 PIP H

SBC2 MCL H — BM1

SBC2 SN12 H — AH1

8234 E49: A0 B0 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

ED1 — TCCM7 CMUX 12

EC1 — TCCM7 CMUX 13

EB1 — TCCM7 CMUX 14

EA1 — TCCM7 CMUX 15

SBC2 SN13 (SB) L — AU1 — 8640 E9

MB110 COMPER H — CB1

SBC2 SN14 H — BN1

MB13 ATA H — CC1

SBC2 SN15 (SB) L — BF1 — 8640 E10

MBC2 RI L — FH1

MBC2 RIϕ L — FM1

7489 E31 — CJ2 — TCCM7 7CH L

8234 E50: A0 B0 A1 B1 A3 B3 A2 B2 S1 S0 — f0 f1 f3 f2

SBC2 SPR H — KE2

MR6 DEN 2 H — CV2

SBC2 7CH H — CU2

MR6 EACDTE H — CN2

MB18 FCOF (1) L — CH2

TCCM3 ACCL H — CA1

MB12 R11 L — FK1

* CMUX LINES ALSO DRIVEN FROM M8905, M8909

REVISIONS		
CHK	CHANGE NO	REV

TITLE		SIZE	CODE	NUMBER	REV
TAPE CONTROL COMMON MODE	(TCCM7)	D	CS	M8933-Ø-1	B
SCALE	SHEET 7 OF 7	DIST			

DCSM8933-Ø-1 B

COMPONENT SIDE VIEW

38

39

5

2-11 2-15 2-20 2-14 2-12 2-13 2-19 2-17 2-16 2-18

TH1 TH2

E80 E66 E57 E48 E40 E32 E24 E16 E8
E79 E73 E65 E64 E56 E47 E39 E31 E23 E15 E7 (SPARE)
E78 E72 E63 E55 E46 E38 E30 E22 E14 E6
E77 E71 E62 E54 E45 E37 E29 E21 E13 E5
E76 E69 E60 E51 E43 E35 E27 E19 E11 E3 (SPARE)
E75 E68 E59 E50 E42 E34 E26 E18 E10 E2
E74 E67 E58 E49 E41 (SPARE) E33 E25 E17 E9 E1
E70 E61 E53 E52 E44 E36 E28 E20 E12 E4

C87 R8 C86 R13 R4 R3 C85 R12 C84 R11 R6 R5 R1 C83 R10 C82 R9 C81 R7 C92 C93 C94 C90 C89 C88

F E D C B A

V U T S R P N M L K J H F E D C B A

NOTES: REWORK INSTRUCTIONS:
1. ADD IC A234 (DEC PT# 19 11345 00) AT LOCATION E11
2. ADD JUMPERS
A. E11-9 TO E11-10
B. E11-9 TO E4-4
C. E11-12 TO E58-4
D. E11-7 TO E50-7
E. E49 - TO FEEDTHRU CONNECTING TO JT1

WITHOUT INK

CHK	CHANGE NO	REV
	M8933-1	A
	M8933-2	B

40 TVF
SEE NOTES FOR REWORK INFO

SIGNATURES	DATE
DRN. MK	-2
CHK'D.	
ENG.	FEB 7
PROJ.ENG.	FEB 7
PROD.	2FEB7
SCALE 2/1	
SHT. 1 OF 8	
NEXT HIGHER ASSY. B-DDM 30	
ETCH REV.	A
P.C. DESIGN DATA BASE REV.	A

digital

TITLE TAF - 11 MAIN MODE

SIZE	CODE	NUMBER	REV
D	UA	M8933-0-0	

1 MS#

LINE	ITEM	DOCUMENT NO.	PART NO.		DESCRIPTION		QTY	REFERENCE DESIGNATORS
1	1	D-CS-M8933-0-1			CIRCUIT SCHEMATIC		REF	
2	2	D-UA-M8933-0-0			UNIT ASSY.		REF	
3	3	D-MD-5012482-0-0			DRILL & ETCH DRAWING		REF	
4	4	B-DD-M8933-0-0			DWG. DIRECTORY		REF	
5	5		5012482-00		M8933		1	
6	6		1001610-00		.01 MFD 50V Z5U 309CER/8000PF MIN		82	C1-C80,C82,C86
7	7		1005306-00		6.8MFD 35V 10% 150D S.TA	(10-00	7	C87-C93
8	8		1000018-00		120.0 MMF 100V 5%200PPM DM15S	(10-00	1	C81
9	9		1000042-00		1000.0 MMF 100V 5%200PPM DM15S	(10-00	1	C83
10	10		1000025-00		560.0 MMF 100V 5%200PPM DM15S	(10-00	2	C84,C85
11	11		1300316-00		470 1/4W 5% CC	(13-00	1	R7
12	12		1300365-00		1 K 1/4W 5% CC	(13-00	5	R1,R4-R6,R13
13	13		1300479-00		10 K 1/4W 5% CC	(13-00	2	R11,R12
14	14		1300229-00		100 1/4W 5% CC	(13-00	1	R3
15	15		1300250-00		150 1/4W 5% CC	(13-00	1	R2
16	16		1300271-00		220 1/4W 5% CC	(13-00	1	R10
17	17		1300295-00		330 1/4W 5% CC	(13-00	1	R9
18	18		1309595-00		1 M 1/4W 5% CC	(13-00	1	R8
19	19		1905575-00		7400 NAND GATE-QUAD 2IN		6	E22,E32,E63,E69,E71,E79
20	20		1909004-00	DEC	7402 NOR GATE-QUAD 2IN		5	E21,E38,E45,E47,E56
21	21		1909686-00		7404 INVERTER GATE-HEX 1IN		5	E31,E37,E51,E73,E78
22	22		1911944-00		555CN TIMER,FUNCT.BLOCK		1	E65
23	23		1910155-00	DEC	7408 AND GATE,POS.QUAD 2IN	14	8	E20,E30,E40,E44,E46,E60,E77,
							CONT	E80
24	24		1905576-00		7410 NAND GATE-TRIPLE 3IN		4	E6,E43,E57,E70
25	25		1910878-00		7427 NOR GATE-TRIPLE 3IN		2	E14,E42
26	26		1905587-00	DEC	7473 FF-JK DUAL,MASTER SLAVE,10MHZ		1	E16
27	27		1905547-00	DEC	7474 FF-D DUAL,EDGE TRIGGER,15MHZ		7	E23,E28,E39,E54,E55,E62,E72
28	28		1910011-00	DEC	7486 X-OR GATE-QUAD 2INPUT		1	E29
29	29		1910436-00	DEC	74123 ONE SHOT-DUAL,RETRIGGERABLE		1	E61

REVISION HISTORY			VARIATIONS FOR THIS ASSY.
CHK	ECO NO	REV	
R.R	00002	B	00

FIRST USED ON: TM03

MADE BY:	M.RIPLEY	DATE: 14-MAR-78
CHECKED:	P.BOSSMAN	DATE: 14-MAR-78
DSN.ENG.:	J.VAGIAS	DATE: 14-MAR-78
PROD.:	G.DILLARD	DATE: 14-MAR-78
RESP.ENG.:	J.VAGIAS	DATE: 14-MAR-78

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PARTS LIST
TAPE CONTROL COMMON MODE

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	M8933-0-DBP	B
		ASSY.NO.: D-UA-M8933-0-0	EDIT# 6

LINE	ITEM	DOCUMENT NO.	PART NO.	DESCRIPTION	QTY	REFERENCE DESIGNATORS
30	30		1909937-00	74153 MUX 1 OF 4 (DUAL)	5	E25,E26,E33,E34,E36
31	31		1910655-00	74157 MUX 1 OF 2 (QUAD	4	E66,E74-E76
32	32		1910650-00	74161 COUNTER,SYNCHR. UP	2	E8,E15
33	33		1910651-00	DEC 74175 FF-D QUAD	2	E27,E35
34	34		1910035-00	DEC 74197 COUNTER,ASYNCH UP,H1 SPEED 828	6	E4,E5,E12,E13,E24,E48
35	35		1910645-00	75452 DRIVER,PERIPH,DUAL,NAND	4	E19,E52,E53,E64
36	36		1911315-00	8234 MUX 1 OF 4	7	E49,E50,E58,E59,E67,E68,E11
37	37		1911469-00	DEC 8640 RECEIVER,BUS,QUAD,UNIBUS.Q-BU	6	E1,E2,E9,E10,E17,E18
38	38		1210711-02	HANDLE ASSY,MOD DOEHLER-JARVIS	1	
39	39		9006732-00	EYELET, ROLLED FLANGE, .121 OD X .219 LG	12	
40	40		9105740-55	WIRE(WRAP)30AWG UL1423 (91-00 A/R		

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	TITLE: PARTS LIST TAPE CONTROL COMMON MODE	SIZE: K	CODE: PL	DOCUMENT NUMBER: M8933-0-DBP	REV: B

NOTES:
1. TO ENABLE READING RECORDS LESS THAN 10 CHARACTERS W2 MUST BE REMOVED AND W3 ADDED.

+3V
CNRZ1 SHORT REC II (1) H
CNRZ1 SHORT REC II (Φ) H
CNRZ1 SHORT REC I (1) H
TCCMG RSDO H BN2
TCCM3 READING H BJ2
TCCM7 PESB L BD1
CNRZ1 RD RESET L
TCCM7 PESB L BD1
BF2 CNRZ1 REV LECS L
BE2 CNRZ1 REV LECS H
CNRZ1 SHORT REC II (1) H
MBI5 REV L CF2
AV2 CNRZ1 REV CECS (1) H
CNRZ2 ERDS (1) L
CNRZ1 REV CECS (Φ) H
CA2, DA2
AA2, BA2
+5V
AC2, AT1
BC2, BT1
CC2, CT1
DC2, DT1
C1 THRU C6Φ .01 μf
C65, C67, C68 C69 6.8 μf
TCCM4 WRT CLK H
ADI
CNT EN
CRY EN
CNRZ1 TPMK WINDOW (2) H
BL2 CNRZ1 RD ACTV L
BR2 CNRZ1 NO CHAR RD L
SEE NOTE 1
W3
W2
SHORT REC III
VALID RECORD 10 CHARACTERS
BM2 CNRZ1 ENBL SHDN CNTR L
CB2 CNRZ1 RST SHDN CNTR L (RSDO)
CNRZ2 FWD LRECS (Φ) H
CNRZ1 RD ACTV L
CNRZ2 RD PLS (1) L
TCCM4 WRT CLK H
CNRZ1 RD STB LATE H
CNRZ1 CLK CECS H

DRN		7 DEC 76	FIRST USED ON TM03
CHK'D		16 SEP 76	TITLE TAPE CONTROL (CNRZ1)
ENG			
PROJ. ENG.			
PROD.		17 DEC 76	
NEXT HIGHER ASSY.			
B-DD M8934-0			SIZE D CODE CS NUMBER M8934-0-1 REV A
SCALE			
SHEET 1 OF 5			DIST

digital

REVISIONS: REV. | CHANGE NO. | CHK

CNRZ1 SHORT REC I(ϕ) L
CNRZ1 SHORT REC II(ϕ) H
CNRZ1 TPMK WINDOW(ϕ) H
7427 E13
7405 E21
BM2
CNRZ2 ENBL SHDN CNTR L

TCCM 5 SHDN 8(1) H
AV1
74ϕϕ E19

+5V
R4 1ϕK
CG2 12ϕpf
CNRZ2 RD PLS (1) H
74123 E39
BM1
CNRZ2 ERDS (1) H
AH2
CNRZ2 ERDS (ϕ) H
+3V

MBI 4 INIT PLS H
DD1
7474 E27
TCCM 3 DRV SET PLS L
AE2
TCCM4 ERROR RESET (1) L
CL2
74ϕ8 E26

TCCMT PESB L
BD1
74ϕ1 E57
DL1
CNRZ2 TMRK L
CNRZ2 TMK H
AD2
CNRZ2 ES/IL TMRK L

+3V
CNRZ1 REV CRCS (1) L
CNRZ5 FMK CHAR L
CNRZ2 ERDS(1) H
74ϕ8 E26
7474 E27

+3V
7474 E5
AU2
CNRZ2 FWD LRCS (1) H
CNRZ2 FWD LRCS (ϕ) H
CNRZ1 RD RESET L
74ϕ8 E10

+3V
MBI5 FWD H
AE2
7474 E5
ABZ
CNRZ2 FWD CRCS (1) H
CNRZ1 CLK CRCS H
CNRZ2 FWD CRCS (ϕ) H
TCCM 3 READING L
BK2
74ϕ2 E11

CNRZ1 REV LRCS L
74ϕϕ E22
CNRZ2 LRCS H
CNRZ1 REV CRCS (ϕ) H
74ϕϕ E12
CNRZ2 CRCS H

74ϕ8 E10
74ϕ1 E18
AF2
CNRZ2 CLK L CK CHAR REG L
74ϕ2 E11
AN2
CNRZ2 CHK CHAR L

+5V
R8 1K
CWD3 45IPS L
DR2
MR5 MAINT RDS L
AT2
TCCM 6 RDS0 H
BN2
MR5 WRP 3 L
BU2
74ϕϕ E47
7486 E58
7474 E31
CNRZ2 ERDS(1) L
CK2
MBI 5 GO BUF H
74ϕ8 E34
CNRZ1 RD STRB LATE H

+5V
R6 5.6K
CG3 1ϕϕpf
+3V
74123 E39
74ϕ2 E32
CNRZ2 RD PLS (1) H
CNRZ2 RD PLS (1) L
TCCM7 PESB L
BD1

CNRZ2 ERDS (1) H
74ϕ5 E21
CV2
CNRZ2 RDS L
74ϕ2 E11
MR5 MAINT RDS L
AT2
TCCM7 PESB L
BD1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TAPE CONTROL (CNRZ2)	D	CS	M8934-Ø-1	A
SCALE —	SHEET 2 OF 5	DIST.		

MBI5 WRITE H
MR5 WRP4 L
MBI 5 FWD H
CS1
DB1
AR2
74Ø8 E25
74Ø Ø E45
74Ø8 E25
74Ø2 E24
CNRZ3 CRC H
CNRZ3 CYCLE(3)1 L
+5V
RG 1K
ENABLE ERROR CORRECTION
W1
TCCM4 SPACE L
DP1
74Ø8 E25
DK2
CYCLE 1(1) H
CU1
CYCLE 2(1) H
CNRZ3 ENBL CYCLE 2 H
MBI7 REV H
CD2
MBI6 DRV SET PLS H
AS2
74Ø8 E49
7474 E29
74Ø Ø E45
74Ø8 E49
MBI9 INIT PLS(1) L
CWD3 SAC L
DD2
DB2
74Ø8 E49
74Ø8 E49
TCCM4 SPACE L
DP1
74Ø8 E1Ø
74Ø Ø E45
+3V
7474 E44
CR1
CNRZ3 CYCLE 3(1) H
CNRZ3 CYCLE 3(1) L
CNRZ3 CYCLE 2(1) L
MBI5 GO BUFF H
CK2
7402 E23
R3 1ØØ
CG4 68Ø pf
74Ø4 E48
CNRZ3 CYCLE 2 & 3 H
+5V
R5 22Ø
+3V
CG1 .Ø1µf
+CG6 6.8µf
R7 33Ø
+5V
R1 1K
BF3 SET VPAR L
BH2
TCCM4 SPACE L
DP1
DN1
SCBL SET VPE H
74Ø Ø E47
74Ø8 E17
CNRZ5 PARITY ERROR L
CNRZ1 REV CRCS H
CNRZ4 CLK VPE L
7427 E13
74Ø5 E36
DF1
CNRZ3 INC/VPE L
TCCM2 XWD P H
BF4 WDBFO 7(1) H
BF4 WDBFO 6(1) H
BF4 WDBFO 5(1) H
TCCM2 XWD 4 H
BF4 WDBFO 3(1) H
BF4 WDBFO 2(1) H
BF4 WDBFO 1 (1) H
BF4 WDBFO Ø (1) H
BC1
BE1
BB2
BK1
BD2
BL1
BF1
BJ1
BB1
85ØØ E6
CDP
CDØ
CD1
CD2
CD3
CD4
CD5
CD6
CD7
AL1
AP1
AN1
AM1
AK1
AS1
AE1
AR1
AJ1
CNRZ3 CRC P(1) H
CNRZ3 CRC 7(1) H
CNRZ3 CRC 6(1) H
CNRZ3 CRC 5(1) H
CNRZ3 CRC 4(1) H
CNRZ3 CRC 3(1) H
CNRZ3 CRC 2(1) H
CNRZ3 CEC 1(1) H
CNRZ3 CRC Ø(1) H
TCCM4 WDR(1) H
AK2
CNRZ4 CRC ERROR H
CNRZ4 REV CRCE ENBL H
BD1
TCCM7 PESB L
74Ø8 E49
74 1Ø E8
7432 E28
74Ø5 E36
DV2
CNRZ3 CORE/CEC L
CNRZ3 CEC H
TCCM5 EOB L
BT2
74Ø4 E3Ø
MBI6 DRV SET PLS H
AS2
74Ø4 E3Ø
74Ø2 E23
MR5 WRP 4 L
MR5 WRP 3 L
DB1
BU2
74Ø Ø E42
7432 E28
TCCM4 CRC STRB H
BP2
TCCM4 WB CLK H
BA1
TCCM4 LEC STRB(SB) L
BS1
74Ø2 E23
74Ø8 E25
CNRZ2 FWD LECS(Ø) H
CNRZ4 CRC ERROR L
CNRZ2 EEDS(1) H
74Ø2 E11
74Ø8 E17
7474 E16
TCCM7 PESB L
MR5 WRP 3 L
BD1
BU2
74Ø8 E17
74Ø5 E36
BV2
CNRZ3 PEF, LRC L
+3V
7474 E31
AV1
CNRZ2 FWD LECS(1) L
CNRZ4 LRCC MATCH H
TCCM5 SHDN=8(1) H
74Ø2 E33
74Ø8 E34
CL2
TCCM4 ERROR RESET (1) L

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL (CNRZ3)	D	CS	M8934-Ø-1	A
SCALE —	SHEET (3) OF 5		DIST.	

CNRZ4 CRC ERROR H

CNRZ4 CRC ERROR L

CNRZ3 CYCLE 2(1) H

CNRZ2 ERDS (1) H

CNRZ5 CRC P H
CNRZ5 CRC 7 H
CNRZ5 CRC 6 H
CNRZ5 CRC 5 H
CNRZ5 RD 4 H
CNRZ5 CRC 3 H
CNRZ5 CRC 2 H
CNRZ5 CRC 1 H
CNRZ5 CRC Ø H

CNRZ3 CYCLE 2(1) L

CNRZ5 VRC H

CNRZ3 CYCLE 2+3 H

+3V

DJ2

CNRZ4 INC ERROR L

CNRZ4 TRK 4 ERR L
CNRZ4 TRK 7 ERR L
CNRZ4 TRK 6 ERR L
CNRZ4 TRK 5 ERR L
CNRZ4 TRK 3 ERR L
CNRZ4 TRK 9 ERR L
CNRZ4 TRK 1 ERR L
CNRZ4 TRK 8 ERR L
CNRZ4 TRK 2 ERR L

CNRZ3 CYCLE 2(1) L
CNRZ5 LECS L
CNRZ2 ERDS(1) H

CNRZ3 CYCLE 3(1) H

CNRZ4 CLK VPE L

CNRZ3 ENBL CYCLE 2 H

CNRZ3 CYCLE 3(1) L

CNRZ4 LECC MATCH H

CNRZ5 RD P H
CNRZ5 RD 7 H
CNRZ5 RD 6 H
CNRZ5 RD 5 H
CNRZ5 RD 4 H
CNRZ5 RD 3 H
CNRZ5 RD 2 H
CNRZ5 RD 1 H
CNRZ5 RD Ø H

MBIG DRV SET PLS H
MR5 ILCC L

CNRZ2 ERDS(Ø) H

+3V

CNRZ5 RD P H
CNRZ5 RD Ø H
CNRZ5 RD 7 H
CNRZ5 RD 1 H
CNRZ5 RD 6 H
CNRZ5 RD 2 H
CNRZ5 RD 5 H
CNRZ5 RD 3 H

CNRZ4 CRC P H
CNRZ4 CRC 7 H
CNRZ4 CRC 6 H
CNRZ4 CRC 5 H
CNRZ4 CRC 3 H
CNRZ4 CRC 2 H
CNRZ4 CRC 1 H
CNRZ4 CRC Ø H

CNRZ3 CYCLE 2(1) L
MBI 7 REV H

CNRZ4 REV CPCE ENBL H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
TAPE CONTROL (CNRZ4)	D	CS	M 8934-Ø-1	A
SCALE	SHEET 4 OF 5	DIST		

TCCMG RDA P H
MES WRP4 L
CNEE2 CRCS H
CNEE5 RD LATCH P(1) L
CNEE5 RD LATCH T(1) L
CNEE5 RD LATCH G(1) L
CNEE5 RD LATCH 5(1) L
CNEE5 RD LATCH 4(1) H
CNEE5 RD LATCH 1(1) H
CNEE5 RD LATCH Ø(1) H
CNEE5 RD LATCH 3(1) H
CNEE5 RD LATCH 2(1) H
74Ø2 E33
74Ø2 E32
74386 E43
743Ø E56
DN2
CNEE5 FMK CHAR L

74175 E46
D3 R3(1) CNEE5 RD LATCH P(1) H
R3(Ø) CNEE5 RD LATCH P(1) L
TCCMG RDA T H
D2 R2(1) CNEE5 RD LATCH T(1) H
R2(Ø) CNEE5 RD LATCH T(1) L
TCCMG RDA G H
D1 R1(1) CNEE5 RD LATCH G(1) H
R1(Ø) CNEE5 RD LATCH G(1) L
TCCMG RDA 5 H
DØ RØ(1) CNEE5 RD LATCH 5(1) H
RØ(Ø) CNEE5 RD LATCH 5(1) L
CLR CLK

74174 E41
TCCMG RDA 4 H
TCCMG RDA 3 H
TCCMG RDA 2 H
TCCMG RDA 1 H
TCCMG RDA Ø H
D5 R5(1) CNEE5 RD LATCH 4(1) H
D4 R4(1) CNEE5 RD LATCH 3(1) H
D3 R3(1) CNEE5 RD LATCH 2(1) H
D2 R2(1) CNEE5 RD LATCH 1(1) H
D1 R1(1) CNEE5 RD LATCH Ø(1) H
DØ RØ(1)
CLR CLK
TCCM7 PESB L
CNEE2 RD PLS(1) H

CNEE4 TRK 7 ERR L
CNEE4 TRK 6 ERR L
CNEE4 TRK 5 ERR L
CNEE4 TRK 3 ERR L
CNEE4 TRK 9 ERR L
CNEE4 TRK 1 ERR L
CNEE4 TRK 8 ERR L
CNEE4 TRK 2 ERR L
CNEE4 TRK 4 ERR L
CNEE5 RD LATCH 7(1) H
CNEE5 RD LATCH 6(1) H
CNEE5 RD LATCH 5(1) H
CNEE5 RD LATCH 4(1) H
CNEE5 RD LATCH 3(1) H
CNEE5 RD LATCH 2(1) H
CNEE5 RD LATCH 1(1) H
CNEE5 RD LATCH Ø(1) H
CNEE5 RD LATCH P(1) H
74Ø2 E53
74Ø2 E59
74Ø2 E33
7486 E52
7486 E54
7486 E43
74Ø5 E37
74Ø5 E36
CNEE5 RD 7 H
CNEE5 RD 6 H
CNEE5 RD 5 H
CNEE5 RD 4 H
CNEE5 RD 3 H
CNEE5 RD 2 H
CNEE5 RD 1 H
CNEE5 RD Ø H
CNEE5 RD P H
CL1 CNEE5 RDB 7 L
CK1 CNEE5 RDB 6 L
CJ1 CNEE5 RDB 5 L
CF1 CNEE5 RDB 4 L
CV1 CNEE5 RDB 3 L
CD1 CNEE5 RDB 2 L
CP1 CNEE5 RDB 1 L
CE1 CNEE5 RDB Ø L
CH1 CNEE5 RDB P L

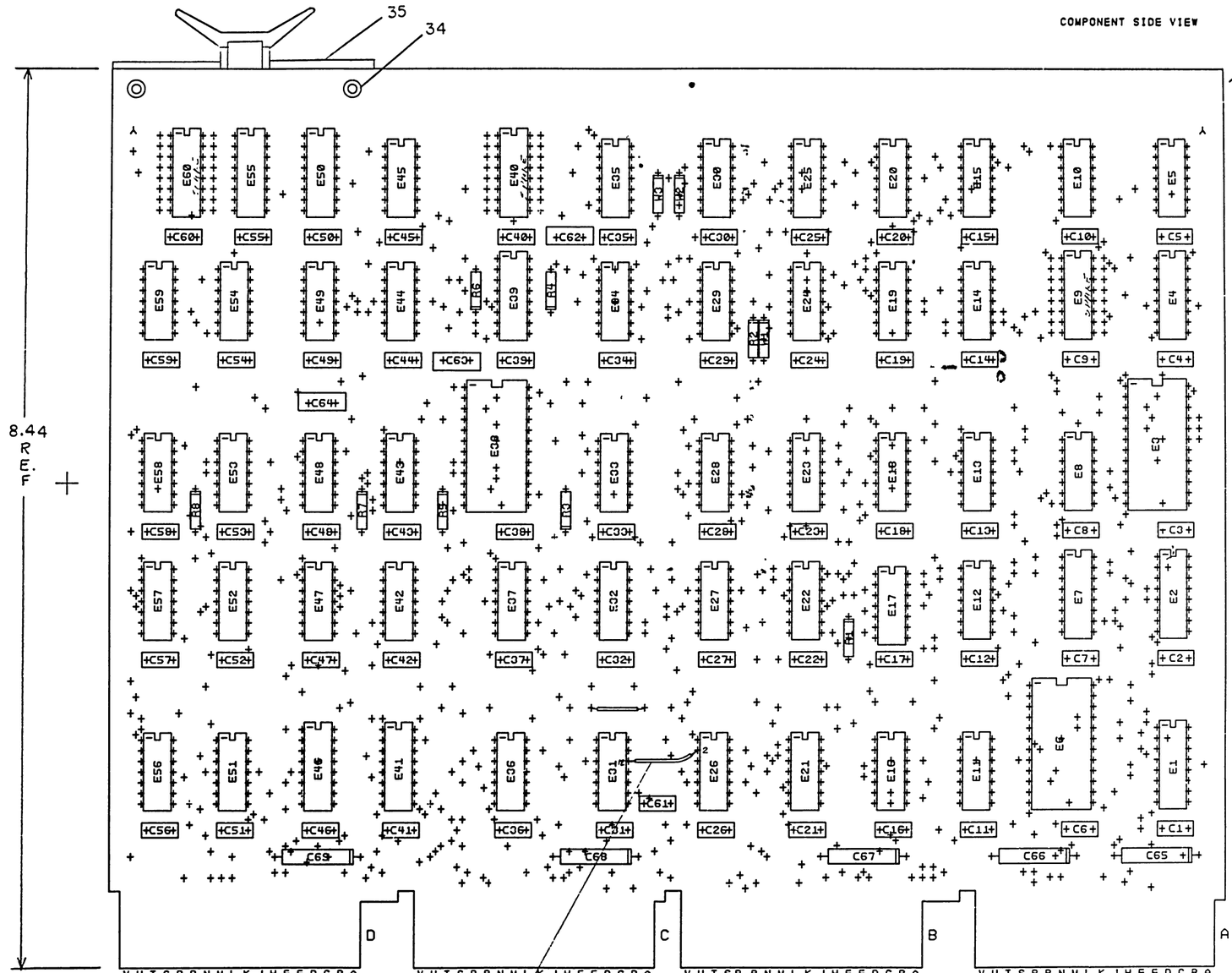
CNEE2 CRCS H
CNEE5 RD PAR ODD H
MB 6 PVN (1) H
CNEE2 CHK CHAR L
CNEE2 EEDS (Ø) H
MB15 GO BUF (1) H
74Ø4 E48
74ØØ E42
7486 E43
74Ø2 E33
7432 E28
7474 E44
74Ø8 E34
BU1 CNEE5 B PAR L
CNEE3 CYCLE 3 (1) L
CNEE5 PARITY ERROR L
CNEE5 VRC H
CNEE2 LRCS H
CNEE5 LRCS L
DA1
CK2

74188 E51
CNEE5 RD LATCH 7(1) H
CNEE5 RD LATCH 6(1) H
CNEE5 RD LATCH 5(1) H
CNEE5 RD LATCH 4(1) H
CNEE5 RD LATCH 3(1) H
CNEE5 RD LATCH 2(1) H
CNEE5 RD LATCH 1(1) H
CNEE5 RD LATCH Ø(1) H
CNEE5 RD LATCH P(1) L
CNEE5 RD LATCH P(1) H
D4 D5 D7 D6 DØ D1 D2 D3
EVEN ODD
ODD EVEN
CNEE5 READ PAR ODD H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE TAPE CONTROL (CNRZ5)
SIZE D CODE CS NUMBER M8934-Ø-1 REV A
SCALE SHEET 5 OF 5 DIST.

COMPONENT SIDE VIEW



NOTES: 1. REWORK INSTRUCTIONS:
ADJ 2 (TWO) JUMPER WIRES AS SHOWN USING ITEM 40.

CHK	CHANGE NO	REV

FOR PARTS LIST REFER TO
B-PL-M8934-0-0

ETCH REV.	B
P.C. DESIGN DATA BASE REV.	EL

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ.ENG.	
PROD.	
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. 2-[illegible]	

digital

TITLE TAPE CONTROL NRZI

SIZE	CODE	NUMBER	REV
D	UA	M8934-0-0	

1 MS#[illegible]

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Steve Marlow
DATE Sept 10, 1976
ENG John R. Pitts
DATE

CHECKED D. Freeman
DATE 16 Nov 76
PROD G. Dillard
DATE 17 DEC 76.

SECTION 1
ISSUED SECTION 1

QUANTITY / VARIATION

NOTES:
USED ON OPTION/MODEL
TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
	D-CS-M8934-0-1		CIRCUIT SCHEMATIC	REF	
	D-UA-M8934-0-0		UNIT ASSEMBLY	REF	
	B-DD-M8934-0		DWG DIRECTORY	REF	
1	D-MD-5012400-0-0	5012400	ETCHED CIRCUIT BOARD	1	
2		10-00016-00	CAP 100PF 100V	1	C63
3		10-00018-00	CAP 120PF 100V	1	C62
4		10-00026-00	CAP 680PF 100V	1	C64
5		10-01610-01	CAP .01UF 100V DISC	61	C1 thru C61
6		10-05306-00	CAP 6.8UF 35V 10%	5	C65 thru C69
7		13-00229-00	RES 100 ¼W 5%	1	R3
8		13-00271-00	RES 220 ¼W 5%	1	R5
9		13-00295-00	RES 330 ¼W 5%	1	R7
10		13-00365-00	RES 1K ¼W 5%	3	R1,R2,R8
11		13-00479-00	RES 10K ¼W 5%	1	R4
12		13-01874-00	RES 5.6K ¼W 5%	1	R6
13		19-05547-00	I.C. DEC 7474	8	E5,E14,E15,E16,E27,E29,E44,E31
14		19-05575-00	I.C. DEC 7400	6	E12,E19,E22,E42,E45,E47
15		19-05576-00	I.C. DEC 7410	2	E8,E18
16		19-05577-00	I.C. DEC 7420	1	E24

E.C.O. NO.

TITLE
TAPE CONTROL
NRZI

ASSY NO. D-UA-M8934-0-0
SHEET 1 OF 3

SIZE B | CODE PL | NUMBER M8934-0-0 | REV. A

INSERTION PARTS LIST DATA BASE REV A

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Steve Marlow
DATE Sept 10, 1976
ENG John B Fleming
DATE

CHECKED D. Bowman
DATE 16 Nov 76
PROD G. Dillard
DATE 17 DEC 76

SECTION 1
ISSUED SECTION 1

QUANTITY / VARIATION

NOTES:
USED ON OPTION/MODEL
TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
17		19-05578-00	I.C. DEC 7430	1	E56
18		19-05590-00	I.C. DEC 7401	1	E57
19		19-09004-00	I.C. DEC 7402	6	E11,E23,E32,E33,E53,E59
20		19-09686-00	I.C. DEC 7404	2	E30,E48
21		19-09930-00	I.C. DEC 7405	3	E21,E37,E36
22		19-10011-00	I.C. DEC 7486	4	E43,E52,E54,E58
23		19-10035-00	I.C. DEC 74197	2	E20,E35
24		19-10046-00	I.C. DEC 7442	1	E55
25		19-10155-00	I.C. DEC 7408	6	E10,E17,E25,E26,E34,E49.
26		19-10436-00	I.C. DEC 74123	1	E39
27		19-10650-00	I.C. DEC 74161	2	E7,E50
28		19-10655-00	I.C. DEC 74157	2	E1,E2
29		19-10878-00	I.C. DEC 7427	1	E13
30		19-11521-00	I.C. DEC 7432	1	E28
31		19-13750-00	I.C. MC 8500	2	E3,E6
32		19-13751-00	I.C. MC 8501	1	E4
33		19-13749-00	I.C. MC 8502	1	E38
34		90-06732-00	EYELET	8	
35		90-08337-06	HANDLE, FLIP CHIP, MAGNETA	4	

E.C.O. NO.

DRB 125

TITLE: TAPE CONTROL NRZ1

ASSY NO. D-UA-M8934-0-0
SHEET 2 OF 3

SIZE B | CODE PL | NUMBER M8934-0-0 | REV A

INSERTION PARTS LIST DATA BASE REV A

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Steve Marlow
DATE Sept 10, 1976
ENG John K. Iko
DATE

CHECKED D. Eaman
DATE 16 NOV 76
PROD T. Dillard
DATE 17 DEC 76

SECTION 1
ISSUED SECTION 1

NOTES:
USED ON OPTION/MODEL
TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION	REF DESIGNATION
36		90-09185-00	INSULATED JUMPERS	3	W1,W2,W3
37		19-10651-00	I.C. 74175	1	E46
38		19-10652-00	I.C. 74174	1	E41
39		19-10724-00	I.C. 74180	1	E51
40		9105740-55	WIRE, #30 AWG, GRN	AR	

E.C.O. NO.

ENGINEERING 3251 DRB 125

TITLE TAPE CONTROL NRZ1

ASSY NO. D-UA-M8934-0-0

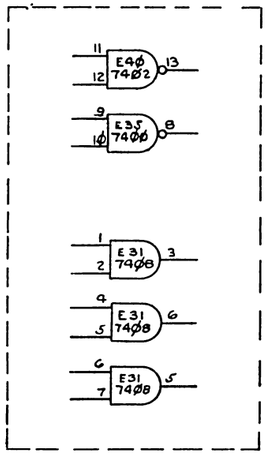
SHEET 3 OF 3

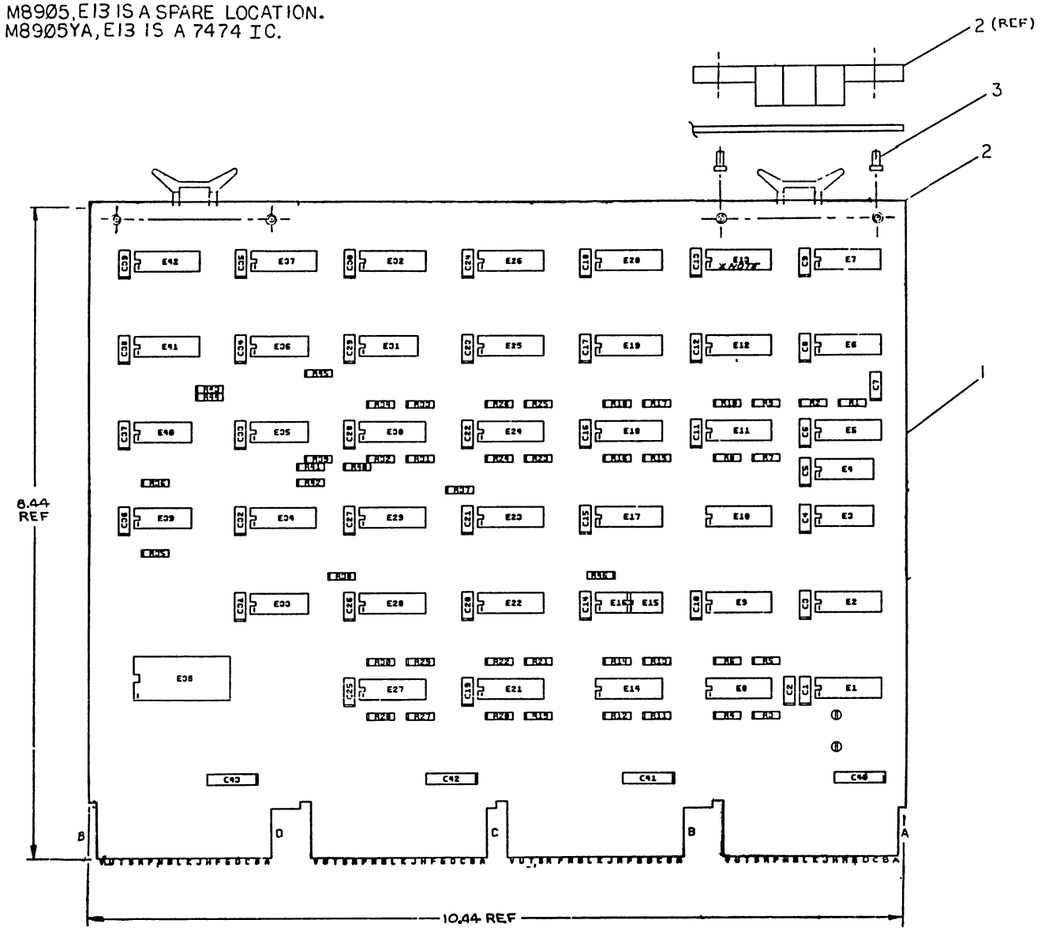
SIZE	CODE	NUMBER	REV.
B	PL	M8934-0-0	A

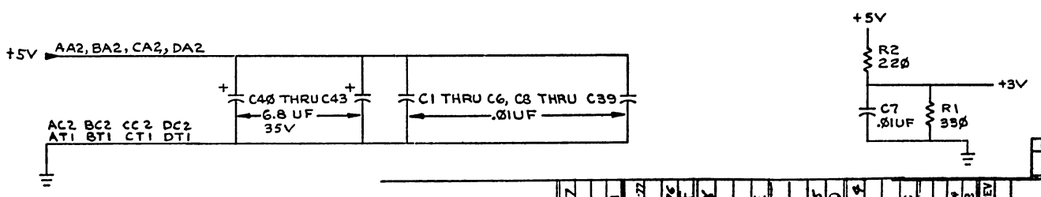
INSERTION PARTS LIST DATA BASE REV A

NOTES:

* FOR M8905, E13 IS A SPARE LOCATION.
FOR M8905YA, E13 IS A 7474 IC.







8234	8	16
74175	8	16
7\$452	4	8
74174	8	16
74157	8	16
74173	8	16
74153	8	16
74154	12	24
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DRAWING 40-322 16-69

DEC FORM NO D40-135A

REF	REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8905-0-4	
REF	REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8905-0-5	
REF	REF	REF		MODULE ECO HISTORY	B-MH-M8905-0-6	
1	1	1		ETCHED CIRCUIT BOARD	5010686	1
4	4	4		HANDLE, FLIP CHIP	9008337-6	2
8	8	2		EYELET	9006732	3
39	39	39	C1 THRU C39	CAP. .01UF 100V 20% DISC	1001610-01	4
4	4	4	C40 THRU C43	CAP. 6.8UF 35V 10% TANT	1005306	5
44	44	44	R3 THRU R46	RES 2K 1/4W 5%	1302388	6
1	1	1	R1	RES 330Ω 1/4W, 5%	1300295	7
1	1	1	R2	RES 220Ω 1/4W 5%	1300271	8
1	1	1	E38	IC DEC 74154	1908700	9
5	5	5	E10, E17, E23, E29, E34	IC DEC 74153	1909937	10
1	1	1	E40	IC DEC 7402	1909004	11
1	1	1	E35	IC DEC 7400	1905575	12
3	3	3	E4, E33, E36	IC DEC 7404	1909686	13
4	4	4	E9, E12, E25, E28	IC DEC 74174	1910652	14
1	1	1	E3	IC DEC 7474	1905547	15
6	6	6	E5, E6, E7, E37, E42, E41	IC DEC 74157	1910655	16
4	4	4	E8, E14, E21, E27	IC DEC 74173	1911330	17
2	2	2	E15, E16	IC DEC 75452	1910645-1	18
4	4	4	E19, E20, E26, E32	IC DEC 74175	1910651	19
7	7	7	E1, E2, E11, E18, E22, E24, E30	IC DEC 8234	1911315	20
1	1	1	E39	IC DEC 7401	1905590	21
1	1	1	E31	IC DEC 7408	1910155	22
-	1	-	E13	IC DEC 7474	1905547	23
A/R	A/R	A/R		WIRE #30 AWG GREEN	8105740-55	24
2	2	2		SPLIT LUG	9006735	25
-	1	1	W1	JUMPER, INSULATED	9009185	26
M8905YB QTY	M8905YA QTY	M8905 QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: D

DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 6

REV	CHANGE NO.	CHK	DATE
H	M8905-00005	J. HESS	10 OCT 77
G	M8905-00004	J. HESS	21 OCT 77
F	M8905-00003	J. HESS	11-30-76
E	M8905-00002	H. DRAB	8-3-76
D	M8905-00001	N. Simmons	7-23-75
C	8905-0020	J. HESS	10/1/74
B	M8905-0010	JOHN HESS	6-24-74
A	M8905-0000	J. HESS	5/31/74

DRN: M. Simmons 9/26/73
CHK'D: L. Cushing 10/7/73
ENG: G. Hall 10/7/73
PROJ. ENG: G. Hall 10/7/73
PROJ: L. Cushing 10-7-73

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MAINTENANCE REGISTER

SIZE D | CODE CS | NUMBER M8905-0-1 | REV. H

DIST.

MAINTENANCE REGISTER MULTIPLEXERS BITS 8-11

MAINTENANCE REGISTER BITS 8-11

RDC MUX BITS 0-3

+5V R37 2K — DS5 & CNRZ5 RDB Ø L — CE2 — 7404 E4 — MR2 RDB Ø H

MR4 CB — BR2 — BF4 WDBFO Ø(1) H — BB1 — TCCM2 WDW80 Ø(1) H — 74153 E10 — FØ

+5V R38 2K — DS5 & CNRZ5 RDB 1 L — CP2 — 7404 E4 — MR2 RDB 1 H

MR4 C9 — BP2 — BF4 WDBFO 1(1)H — BE1 — TCCM2 WDW80 1(1)H — 74153 E10 — F1

74174 E12 — MR2 MAINT 8(1)H — MR2 MAINT 9(1)H

74157 E6 — BR1 — MR2 RDC Ø H — BP1 — MR2 RDC 1 H

+5V R39 2K — DS3 & CNRZ5 RDB 2 L — CD2 — 7404 E4 — MR2 RDB 2 H

MR4 CIØ — BN2 — BF4 WDBFO 2 (1) H — BM2 — TCCM2 WDW80 2 (1) H — 74153 E17 — FØ

+5V R4Ø 2K — DS7 & CNRZ5 RDB 3 L — CV1 — 7404 E4 — MR2 RDB 3H

MR4 C11 — BM2 — BF4 WDBFO 3 (1)H — BJ2 — TCCM2 WDW80 3(1)H — 74163 E17 — F1

74174 E12 — MR2 MAINT IØ (1) H — MR2 MAINT 11 (1) H

74157 E6 — BN1 — MR2 RDC 2 H — BM1 — MR2 RDC 3 H

MR5 WRP 2 OR 3 H

MR5 WRP 1 OR 3 H

MR5: WRP 3 L

MBI4 MASCLR L

MR 5 DATA CLK H

REVISIONS

CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAINTENANCE REGISTER (MR2)	D	CS	M8905-Ø-1	F

SCALE — SHEET 2 OF 6 — DIST

DEC FORM NO DRD 138

DCS M8905-Ø-1 H

MAINTENANCE REGISTER MULTIPLEXER BITS 12-15

MAINTENANCE REGISTER BITS 12-15

RDC MUX BITS 4-7

+5V R41 2K

DS7 & CNRZ5 RDB 4 L — CF2 — 11 — 7404 E4 — 10 — MR3 RDB 4H

MR4 C12 — 3 D0
BF4 WBBF0 4 H — BF2 — 4 C0
TCCM2 WDWB0 4 (1) H — DL2 — 5 B0
6 A0
S1 S0 STB0 — 74153 E23 — F0 — 7

+5V R42 2K

DS5 & CNRZ5 RDB 5 L — CJ2 — 13 — 7404 E4 — 12 — MR3 RDB 5H

MR4 C13 — 13 D1
BF4 WBDF0 5 H — BI2 — 12 C1
TCCM2 WDWB0 5 (1) H — DP2 — 11 B1
10 A1
S1 S0 STB1 — 74153 E23 — F1 — 9

+5V R43 2K

DS7 & CNRZ5 RDB 6 L — CK2 — 1 — 7404 E36 — 2 — MR3 RDB 6H

MR4 C14 — 3 D0
BF4 WDBF0 6 H — CG2 — 4 C0
TCCM2 WDWB0 6 (1) H — DP1 — 5 B0
6 A0
S1 S0 STB0 — 74153 E29 — F0 — 7

+5V R44 2K

DS3 & CNRZ5 RDB 7L — CL2 — 3 — 7404 E36 — 4 — MR3 RDB 7H

MR4 C15 — 13 D1
BF4 WDBF0 7 H — CT2 — 12 C1
TCCM2 WDWB0 7 (1) H — DR1 — 11 B1
10 A1
S1 S0 STB1 — 74153 E29 — F1 — 9

MR5 WRP 2 OR 3 H
MR5 WRP 1 OR 3 H

74174 E12
D4 R4(1) — 13
D5 R5(1) — 14
CLR CLK — 1 — 9
12 — MR3 MAINT 12 (1) H
15 — MR3 MAINT 13 (1) H

74175 E19
D0 R0(1) — 4
D1 R1(1) — 5
CLR CLK — 1 — 9
2 — MR3 MAINT 14 (1) H
7 — MR3 MAINT 15 (1) H

MBI 4 MAS CLR L
MR5 DATA CLK H

74157 E42
3 B0 — 2 A0 — F0 — 4 — BL1 — MR3 RDC 4 H
6 B1 — 5 A1 — F1 — 7 — BK1 — MR3 RDC 5 H
STB S0 — 15 — 1

74157 E42
10 B3 — 11 A3 — F3 — 9 — BJ1 — MR3 RDC 6 H
13 B2 — 14 A2 — F2 — 12 — BH1 — MR3 RDC 7 H
STB S0 — 15 — 1

MR5 WRP 3 L

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAINTENANCE REGISTER (MR3)	D	CS	M8905-0-1	H
SCALE — / — SHEET 3 OF 6	DIST			

DEC FORM NO DRD 128

DCS M8905-0-1 H

CHECK CHAR. REGISTER

C-LINE LATCHES

MR2 RDB Ø H — DS5 DD TRK Ø(1)H — AD1
MR2 RDB 1 H — DS5 DD TRK 1(1)H — AC1
MR2 RDB 2 H — DS3 DD TRK 2(1)H — AA1
MR2 RDB 3 H — DS1 DD TRK 3(1)H — AD2
MR3 RDB 4 H — DS7 DD TRK 4 (1) H — DV1
MR3 RDB 5 H — DS5 DD TRK 5 (1) H — DT2
MR3 RDB 6 H — DS7 DD TRK 6 (1) H — DS2
MR3 RDB 7 H — DS3 DD TRK 7 (1) H — DU1
MR5 RDB P H — DS3 DD TRK P (1) H — AU1

74157 E7, E37, E5 — STB S0

74175 E32, E26, E20 — CLR CLK

8234 E30, E24, E18, E11 — S1 S0

MR5 MAINT ØH
MR5 MAINT 1 H
MR5 MAINT 2 H
MR5 MAINT 3 H
MR5 MAINT 4 H
MR5 MMCLK (1) H
MR5 MAINT 7 H
MR2 MAINT 8 H
MR2 MAINT 9 H
MR2 MAINT 10 H
MR2 MAINT 11 H
MR3 MAINT 12 H
MR3 MAINT 13 H
MR3 MAINT 14 H
MR3 MAINT 15 H

MBI 2 R7 L — DM2
MBI 2 R3 L — DH2

* SEE NOTE BELOW

+5V — R32 R31 R33 R34 2K

CUI TCCM7 CMUX Ø L
ESI TCCM7 CMUX 1 L
ERI TCCM7 CMUX 2 L
EPI TCCM7 CMUX 3 L

CONT OUT 74173 E27 — DØ D1 D2 D3 DATA ENB CLK CLR — FØ F1 F2 F3

R28 R27 R30 R29 2K — CLR2

MR4 CØ — AP1
MR4 C1 — AR1
MR4 C2 — AS1
MR4 C3

+5V — R24 R23 R25 R26 2K

ENI TCCM7 CMUX 4 L
EMI TCCM7 CMUX 5 L
ELI TCCM7 CMUX 6 L
EKI TCCM7 CMUX 7 L

CONT OUT 74173 E21

R20 R19 R22 R21 2K

MR4 C4 — AP2
MR4 C5 — AN1
MR4 C6 — AM1
MR4 C7 — AM2

+5V — R16 R15 R17 R18 2K

6JI TCCM7 CMUX 8 L
EHI TCCM7 CMUX 9 L
EFI TCCM7 CMUX 10 L
EEI TCCM7 CMUX 11 L

CONT OUT 74173 E14

R12 R11 R14 R13 2K

MR4 C8 — AK1
MR4 C9 — AL1
MR4 C10 — AJ2
MR4 C11 — AL2

+5V — R8 R7 R9 R10 2K

6DI TCCM7 CMUX 12 L
6CI TCCM7 CMUX 13 L
6BI TCCM7 CMUX 14 L
6AI TCCM7 CMUX 15 L

CONT OUT 74173 E8

R1 R3 R2 R5 2K

MR4 C12 — AF1
MR4 C13 — AE1
MR4 C14 — AH1
MR4 C15 — AJ1

TCCM7 PES B H — BB1
MBI 4 MAS CLR L — B52
TCPE4 MID POSTAMBLE(1)L — AB1
CNRZ4 CLK L CHK CHAR REG L — AF2
7400 E35

MBI 2 LCTOD (1) H — E6U2 CU2
7400 E33

* ON M8905, SIGNAL TCCM4 200 B.P.I. CLK H FINGER DS1 GOES TO E24 PIN11.
ON M8905YA, SIGNAL TCCM4 200 B.P.I. CLK H FINGER DS1 GOES TO E13 PIN 3 AND E13 PIN 5 GOES TO E24 PIN 11.

+3V — 7474 E13 — D C — DS1 — TO E24 PIN11 — FOR M8905YA — TO E32-1

REVISIONS

CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAINTENANCE REGISTER (MR4)	D	CS	M8905-0-1	F1

SCALE — SHEET 4 OF 6 — DIST

DEC FORM NO DRD 13P

MAINTENANCE REGISTER BITS 0-7

+5V R45 2K

DS3 & CNRE3 RDB P L — CH2 — 7404 E36 — MR5 RDB P H

MBI5 GO BUF H — AK2 — 7408 E31

74175 E19: D3 R3(1) MR5 MAINT 7 (1) H; D2 R2(1) BC1 MR5 MMCLK (1) H; CLR CLK

74157 E41: B0 A0 B1 A1 STB S0 — AE2 MR5 RDC P H

MR5 WRP 3 L

MR4 C7
TCCM2 XWD P H — DE1
TCCM2 WDWBO P(1)H — DD1
74153 E34: D0 C0 B0 A0 S1 S0 STB0 — f0

MR5 RDS H — BU1
74153 E34: D1 C1 B1 A1 S1 S0 STB1 — f1 MR5 DATA CLK H

74174 E25:
MR4 C4 → D1 R1(1) → MR5 MAINT 4 (1) H 20
MR4 C3 → D2 R2(1) → MR5 MAINT 3 (1) H 21
MR4 C2 → D3 R3(1) → MR5 MAINT 2 (1) H 22
MR4 C1 → D4 R4(1) → MR5 MAINT 1 (1) H 23
MR4 C0 → D0 R0(0) → DR2 MR5 MAINT 0 (1) H
CLR CLK ← MBI4 MAS CLR L BS2

MR5 WRP 3 L
MR5 WRP 2 L → 7400 E35 → MR5 WRP 2 OR 3 H
MR5 WRP 1 L → 7400 E35 → MR5 WRP 1 OR 3 H

MBI2 R3 L — BH2
MBI2 REG WRT L — BJ2
7402 E40 → 7404 E36

MBI2 R11 L — AK1 — F6 — 7402 E40 → MR5 WRT R11 H

7402 E40 → 10

74154 E38: f15 f14 f13 f12 f11 f10 f09 f08 f07 f06 f05 f04 f03 f02 f01 f00; STB1 STB0

BB2 MR5 WRP 4 L
DF1 MR5 INC PREAMBLE L
DH1 MR5 MM EOR CLR L
DM1 MR5 IICC L
DJ1 MR5 DISABLE OCC RCVR L
DV2 MR5 WRP 3 L
DU2 MR5 WRP 2 L
DN2 MR5 WRP 1 L
DN1 MR5 WRP 0 L

7401 E39: +5V R36 2K → CV2 MR5 RDS + MAINT RDS L *
7404 E33 → 10 BU1 MR5 RDS H

7404 E33 → 7401 E39 → DL1 MR5 INC TMK L
7404 E33 → 7401 E39 → 10 DE2 MR5 BIT STRB 2 H
7401 E39: +5V R35 2K → DF2 MR5 BIT STRB 1 H

7404 E33 → DB2 MR5 EVEN PAR H
7404 E33 → DD2 MR5 IRD H

E31 7408 → BS1 MR5 WRP 0 + WRP 4 L

* NOTE
SIGNAL MR5 RDS + MAINT RDS L FOR TM02'S FINGER CV2 IS MR5 RDS L FOR TM03'S FINGER CV2 IS MR5 MAINT RDS L.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAINTENANCE REGISTER (MR5)	D	CS	M8905-0-1	H
SCALE	SHEET 5 OF 6	DIST		

DCS M8905-0-1 H

TAPE CONTROL REGISTER

MR4 C0
MR4 C1
MR4 C2
MR4 C3
MR4 C4
MR4 C5
74174 E28
D0 R0(1)
D1 R1(1)
D2 R2(1)
D3 R3(1)
D4 R4(1)
D5 R5(1)
CLR CLK

MBI7 BRIP L
MR5 WRT R 11 H
FC1 DC1

MR4 C6
MR4 C7
MR4 C8
74174 E9

MR4 C9
7474 E3

MR4 C10
MR4 C11
MR4 C12
74174 E9

+3V

MBI 7 DRV SET PLS L
BAI

REMOVE JUMPER FOR TMØ3 W1

7404 E36

75452 E15
75452 E16

D6K2 BK2 MR6 SS2 (SB) L
C6V1 AV1 MR6 SS1 (SB) L
F BK2 MR6 SSØ (1) H
F BA1 MR6 PVN (1) H
D BL2 MR6 DEN Ø (SB) H
D BF1 MR6 FMT Ø (1) H
D BU2 MR6 FMT 1 (1) H
D BV2 MR6 FMT 2 (1) H
E BB2 MR6 ZERO FILL (1) H
BT2 MR6 DEN 1 (Ø) H
DB1 MR6 FMT 3 (1) H
AU2 MR6 DEN 2 L
AV2 MR6 DEN 2 (1) H
AN2 MR6 EAODTE (1) H
AH2 * MR6 TCW(Ø)H + CWD3 SAC L

2K R46 +5

8234 E22
MBI5 GOBUF H AK2
MBI5 F1 H CM2
MBI5 F2 H CN2
MBI5 F3 H CR2
MBI2 RØ L DV1 CXS1
MRG CMUX Ø L
MRG CMUX 1 L
MRG CMUX 2 L
MRG CMUX 3 L

8234 E2
MBI5 F4 H AS2
MBI5 F5 H AT2
MRG CMUX 4 L
MRG CMUX 5 L
MRG CMUX 6 L
MRG CMUX 11 L

8234 E1
MBI2 R11 L F6K1 (DK1)
MR6 CMUX 7 L
MR6 CMUX 8 L
MR6 CMUX 9 L
MR6 CMUX 13 L

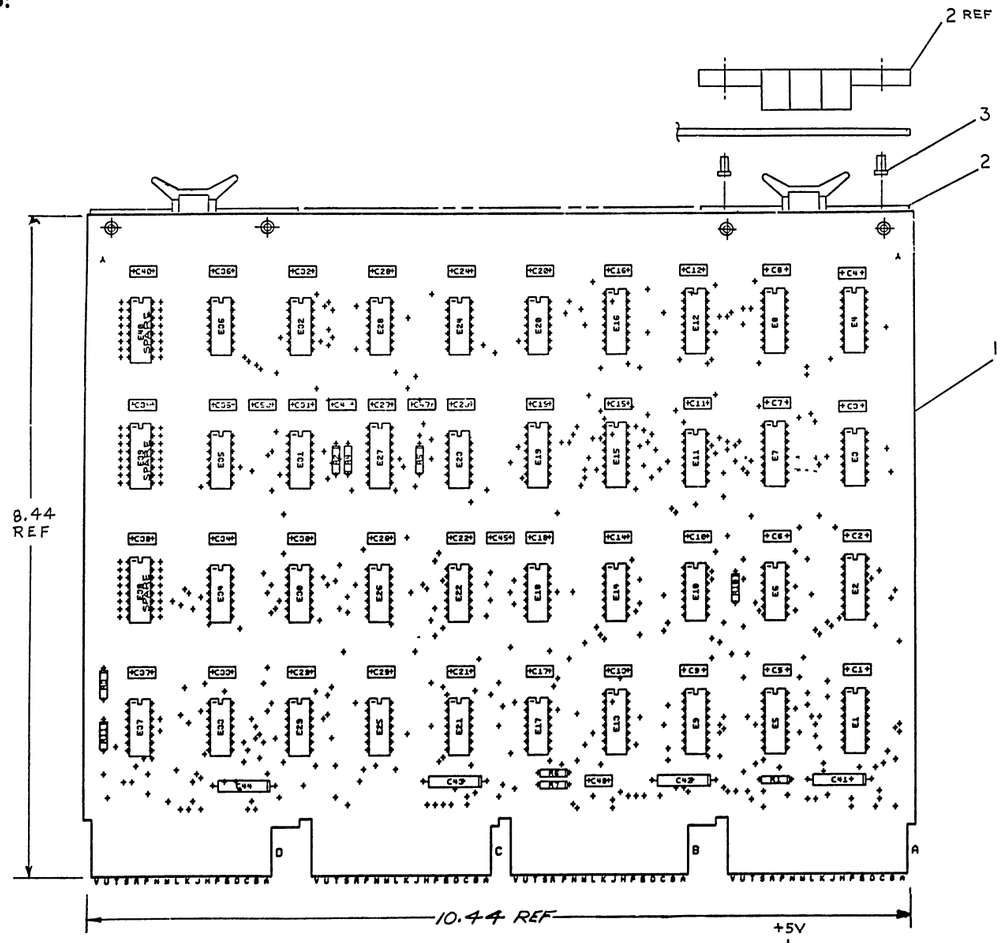
* NOTE
FOR TMB2'S FINGER AH2 IS MR6 TCW(Ø)H, FOR TMB3 FINGER AH2 IS CWD3 SAC L.

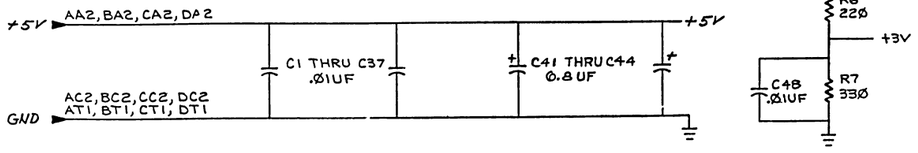
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAINTENANCE REGISTER (MR6)	D	CS	M8905-0-1	H
SCALE —	SHEET 6 OF 6		DIST	

M8905-0-1 H
DCS

NOTES:





74123	8	16
74174	8	16
74153	8	16
74157	8	16
74175	8	16
7442	8	16
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REF		X/Y COORDINATE HOLE LOCATION	K-CO-M8906-0-4	REF
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8906-0-5	REF
REF		MODULE ECO HISTORY	B-MH-M8906-0-6	REF
1		ETCHED CIRCUIT BOARD	5010675	1
4		HANDLE, FLIP CHIP-MAGENTA	9008337-06	2
8		EYELET	9006732	3
38	C1 THRU C36, C37, C48	CAP. .01UF 100V 20% DISC	1001610-01	4
4	C41 THRU C44	CAP. 6.8UF 35V 10% TANT	1005306	5
				6
1	C47	CAP. 150PF 200V 5% DM	1000013	7
1	C50	CAP. 470PF 100V 5% DM	1000024	8
1	C45	CAP. 680PF 100V 5% DM	1000026	9
1	R3	RES 150 1/4W 5%	1300250	10
1	R6	RES 220 1/4W 5%	1300271	11
1	R7	RES 330 1/4W 5%	1300295	12
1	R2	RES 100 1/4W 5%	1300229	13
1	R1	RES 1K 1/4W 5%	1300365	14
2	R10, R11	RES 470 1/4W 5%	1300316	15
1	R4	RES 5.6K 1/4W 5%	1301874	16
1	R5	RES 20K 1/4W 5%	1302391	17
3	E4, E7, E8	IC 74174	1910652	18
4	E1, E2, E5, E9	IC 74175	1910651	19
2	E12, E16	IC 74153	1909937	20
2	E13, E15	IC 74157	1910655	21
2	E3, E11	IC 4008	1910270	22
1	E19	IC 7442	1910046	23
1	E27	IC 74123	19104-36	24
2	E28, E34	IC 7400	1905575	25
2	E21, E36	IC 7402	1909004	26
3	E20, E29, E31	IC 7404	1909686	27
3	E23, E25, E37	IC 7408	1910155	28
1	E24	IC 7410	1905576	29
1	E26	IC 74H11	1909267	30
2	E6, E14	IC 7427	1910878	31
2	E10, E35	IC 7486	1910011	32
3	E18, E22, E30	IC 7474	1905547	33
1	E32	IC 74H74	1909667	34
1	C46	CAP. 50PF 100V 5% DM	1000012	35
2	E17, E33	IC 74180	1910724	36
A/R		WIRE #30 AWG	9105740-55	37
				38

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

REVISIONS				
REV	CHANGE NO.	CHK		
B	M8906-00001		H. Bonanno 7-16-74	
C	M8906-00003		J. Vagias 8-23-74	
D	M8906-00004		H. Bonanno 11-25-75	
E			J. Hess 11-Jan-76	
			R. Bonanno 1-21-77	
			Jim Vagias 7-Feb-77	

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: E

DEC NO.	EIA NO.	DEC NO.	EIA NO.

SEMICONDUCTOR CONVERSION CHART

DRN. J. Vagias 9/4/73
CHK'D. D. Carney 11/2/73
ENG. J. Vagias 1-14-74
PROJ. ENG. J. Vagias 1-14-74
PROD. C. Powers 1-14-74
NEXT HIGHER ASSY
SCALE
SHEET 1 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE (BFI)
16 BIT-
BIT FIDDLER

SIZE D | CODE CS | NUMBER M8906-0-1 | REV. D
DIST

DEC FORM NO DRD 135A

BF2 P BF RUN (1) H
7404 E29
7408 E25
AC1
MBI 9 BF ENABLE H
TCCM 3 A EMP(1) H
CS2
+3V
R4 5.6K
C46 56 Pf
200 NS 74123 E27
+3V
D PR 1 ODD FRAME 7474 E30 C CLR Ø
+5V
DV2
BF2 ODD FRM (1) H
7402 E21
7402 E21
7404 E29
7402 E21
MBI4 MAS CLR L
7411 E26
BF 2 SCLK (1) L
DL2
TCCM 3 READING L
DK2
7404 E29
D PR 1 MB XFR 7474 E30 C CLR Ø
1J3 74123 -27
C47 150 Pf
R5 20K
+5V
DL2
BF2 SCLK (1) L
TCCM 4 WRT STRB H
D I1
BF2 SLCT-A (Ø) H
BF2 SLCT-B (Ø) H
7410 E24
7400 E28
7408 E25
DS2
MBI4 MAS CLR L
API
MBI5 WRITE L
7404 E29
D PR 1 DTE 7474 E22 C CLR Ø
7400 E34
DF1
BF2 SET DTE L
BF2 CLR ERROR L
CR2
MBI 5 FWD H
7404 E31
7486 E35
BF2 SLCT-B (1) H
7410 E24
7404 E31
BF3 15 MODE L
ACI
MBI9 BF ENABLE H
7408 E23
7404 E31
BR1
MB WCLK H
7400 E28
BF2 P-BF RUN (1) H
+3V
BF 2 SLCT-A (Ø) H
7404 E20
AJ2
BF2 FCCLK H
CP1
BF 2 SLCT-A (1) H
API
MBI 5 WRITE L
7400 E37
7402 E36
TCCM 4 WRT STRB H
DV1
7408 E37
R3 150 Ω
C45 680 Pf
D PR 1 SLCT-A 7474 E22 C CLR Ø
7400 E28
BF3 15+ NORMAL L
+3V
CR1
BF2 SLCT-B (1) H
D PR 1 SLCT-B 74H74 E32 C CLR Ø
BF2 SLCT-B (Ø) H
D PR 1 74H74 E32 C CLR Ø
7404 E31
BF3 15+NORMAL H
BF2P-BF RUN(1) H
7402 E36
7400 E28
7404 E31
R2 100 Ω
C50 470 Pf
MRG RDS H
DU1
7408 E37
+3V
+5V
R11 470
D 7474 E18 C
DU2
CNRZ4 CHECK CHAR L
BF2 DATA STRB H
7404 E20
BF2 SLCT-B (Ø) H
CP1
BF2 SLCT-A (1) H
CB1
BF3 CORE DUMP H
7486 E18
BF2 SLCT-B (1) H
CR1
7427 E6
CD1
BF2 CLK DH
7427 E6
CE1
BF2 CLK CH
7427 E14
CH1
BF2 CLK BH
7427 E14
CF1
BF2 CLK AH

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
16 BIT-BIT FIDDLER (BF2)	D	CS	M8906-0-1	D
SCALE —	SHEET 2 OF 5		DIST	

DEL FORM NO. DRD 13B

MRG FMT 3(1)H — BT2 — 7404 E20
MRG FMT 2(1)H — DS1 — 7404 E29
MRG FMT 1 H — BN2 — D1
MRG FMT Ø H — BM2 — DØ
7442 E19 — D3 D2 D1 DØ — f9 f8 f7 f6 f5 f4 f3 f2 f1 fØ

CB1 — BF3 CORE DUMP H
BF3 CORE DUMP L
CN2 — BF3 IS MODE L
7410 E24 — 7404 E20 — CA1 — BF3 BFFMTE H
7404 E20 — CC1 — BF3 NORMAL MODE H
BF3 NORMAL MODE L

7400 E34 — 7404 E31 — BF3 IS + NORMAL L
BF3 IS + NORMAL H

MB D-17 REC H
MB D-16 REC H
MB D-15 REC H
MB D-14 REC H
MB D-13 REC H
MB D-12 REC H
MB D-11 REC H
MB D-1Ø REC H
4ØØ8 E11

MB D-Ø9 REC H
MB D-Ø8 REC H
MB D-Ø7 REC H
MB D-Ø6 REC H
MB D-Ø5 REC H
MB D-Ø4 REC H
MB D-Ø3 REC H
MB D-Ø2 REC H
4ØØ8 E3

MB D-Ø1 REC H
MB D-ØØ REC H

4Ø28 E11 — 4ØØ8 E3 — MB DPA REC H — AE1

MRG EVEN PAR H — CL2 — 7486 E10 — AL1 — BF3 DPA TM L
1486 E10 — +5V — R1Ø 47Ø
7486 E10 — +3V — J CLR 1 PARITY ERROR 7474 E18 C PR 3 — AF1 — BF3 SET D PAR(1) H
MB WCLK H — 1Ø
BF2 CLR ERROR L

MR3 RDC 7H — DJ1
MR3 RDC 6H — DH1
MR3 RDC 5H — DK1
MR3 RDC 4H — DL1
MR2 RDC 3H — BJ2
MR2 RDC 2H — BJ1
MR2 RDC 1H — BH1
MR2 RDC ØH — BH2
E17 74180 PARITY TREE — ODD OUT — EVEN OUT — EVEN IN — ODD IN
MR5 RDC P H — CK2 — 7402 E21

7486 E35 — DNI — MR6 PVN(1) H
7400 E34 — BF2 DATA STRB H — DM2 — BF3 SET V PAR L
*SEE NOTE

*NOTE:
(A) IF TMØ2 BACKPANEL IS USED, SIGNAL SET V PAR IS NOT USED
(B) IF TMØ3 BACKPANEL IS USED, SIGNAL SET V PAR GOES TO M8934 MODULE.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
16 BIT – BIT FIDDLER (BF3)	D	CS	M89Ø6-Ø-1	D
SCALE	SHEET 3 OF 5		DIST	

BF3 CORE DUMP L
TCCM 7 7 CH L CJ2

MR6 PYN (1) H DN1
TCCM7 PES B L DD2
7408 E39

74174 WRITE BUFFER D12-17 E8

MB D-17 REC H BF1
MB D-16 REC H BE2
MB D-15 REC H BE1
MB D-14 REC H BD2
MB D-13 REC H BD1
MB D-12 REC H BC1

74174 WRITE BUFFER D6-11 E7

MB D-11 REC H BB2
MB D-10 REC H BB1
MB D-09 REC H BA1
MB D-08 REC H AV2
MB D-07 REC H AV1
MB D-06 REC H AU2

74174 WRITE BUFFER D0-05 E4

MB D-05 REC H AU1
MB D-04 REC H AT2
MB D-03 REC H AS2
MB D-02 REC H AS1
MB D-01 REC H AR2
MB D-00 REC H AR1

MBI 4 MASCLR L DS2

MB WCLK H
MBI 9 BFENABLE H
7408 E23
BF4 CLK WRT BUF H

74157 E15
74H11 E26
7408 E23

DE2 BF4 WD BFO 7 H
DF2 BF4 WD BFO 6 H
DH2 BF4 WD BFO 5 H
DJ2 BF4 WD BFO 4 H

7409 E23

E33 74180 PARITY TREE
EVEN IN
ODD IN
EVEN OUT
ODD OUT

DD1 BF4 WD BFO P H
*SEE NOTE:

74153 E16
74153 E12
STB1 STB0
S1 S0

DN2 BF4 WD BFO 3 (1) H
DP2 BF4 WD BFO 2 (1) H
DR2 BF4 WD BFO 1 (1) H
DT2 BF4 WD BFO 0 (1) H

BF2 SLCT-B (1) H
BF2 SLCT-A (1) H

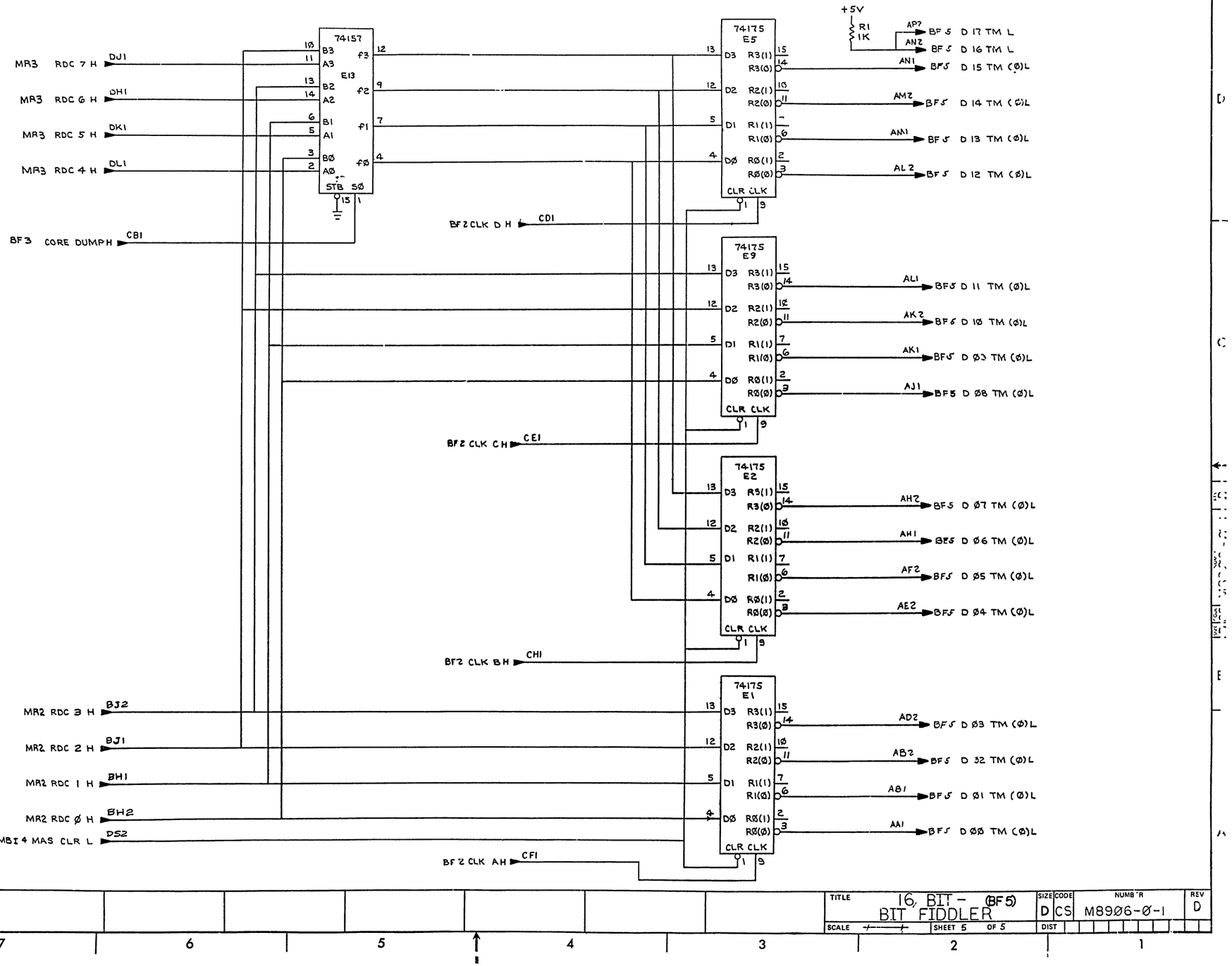
NOTE:
(A) IF TM02 BACKPANEL IS USED, SIGNAL WDBFO P IS NORMALLY UNUSED.
(B) IF TM03 BACKPANEL IS USED, SIGNAL WDBFO P GOES TO M8933 MODULE.

SLCT-B	SLCT-A	FUNCTION
0	0	11[(7+9 TRK·$\overline{CD}$·1ST FRM)+(CD·1ST FRM)]
0	1	11[7+9TRK·CD·2ND FRM]
1	0	11[(7+9TRK·$\overline{CD}$·2ND FRM)+(CD·3RD FRM)]
1	1	11[7+9TRK·CD·4TH FRM]

REVISIONS
CHK | CHANGE NO | REV

TITLE 16 BIT — BIT FIDDLER (BF4)
SIZE D | CODE CS | NUMBER M8906-0-1 | REV D
SCALE — | SHEET 4 OF 5 | DIST

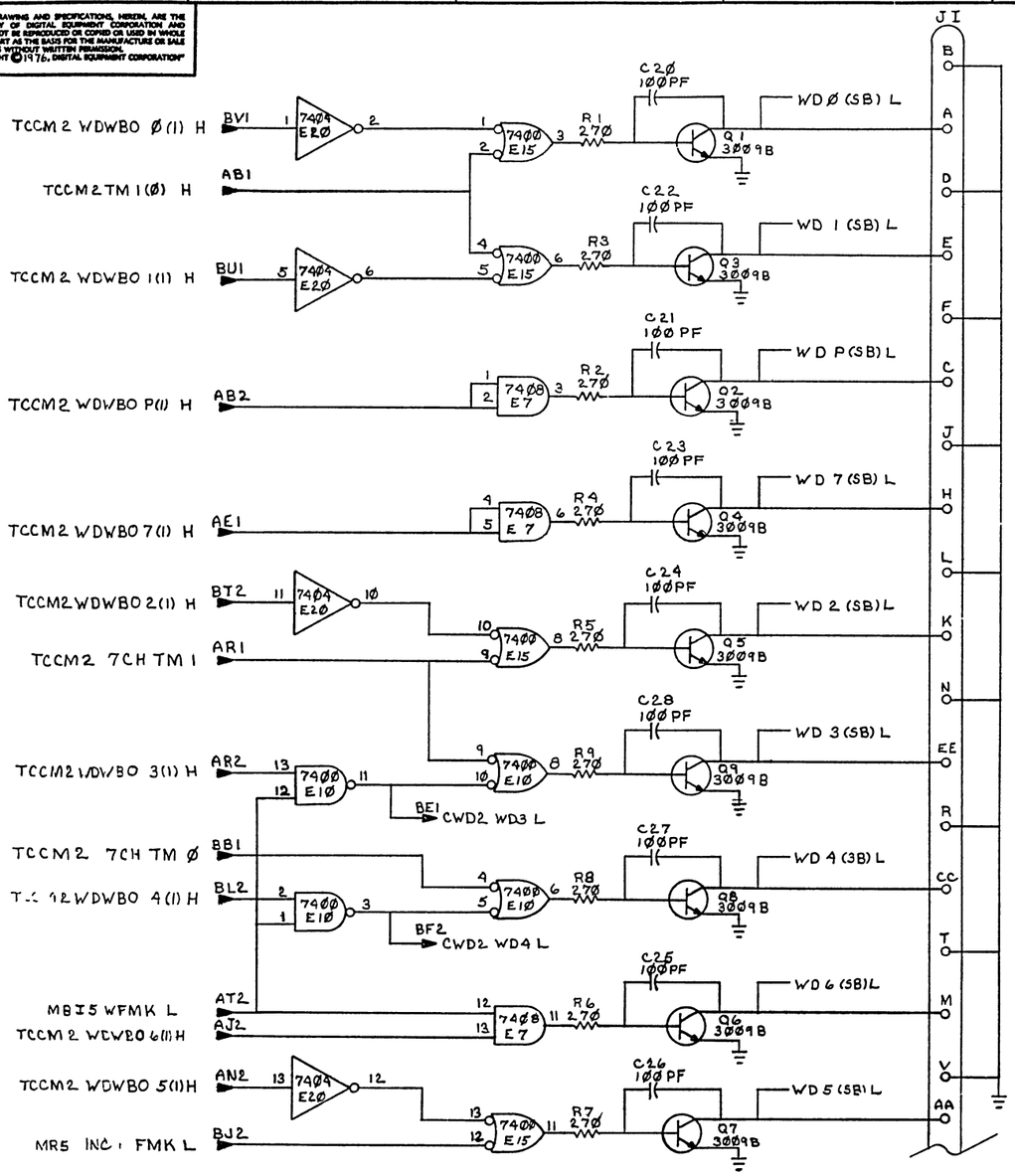
SEC FORM NO
DRD 12a

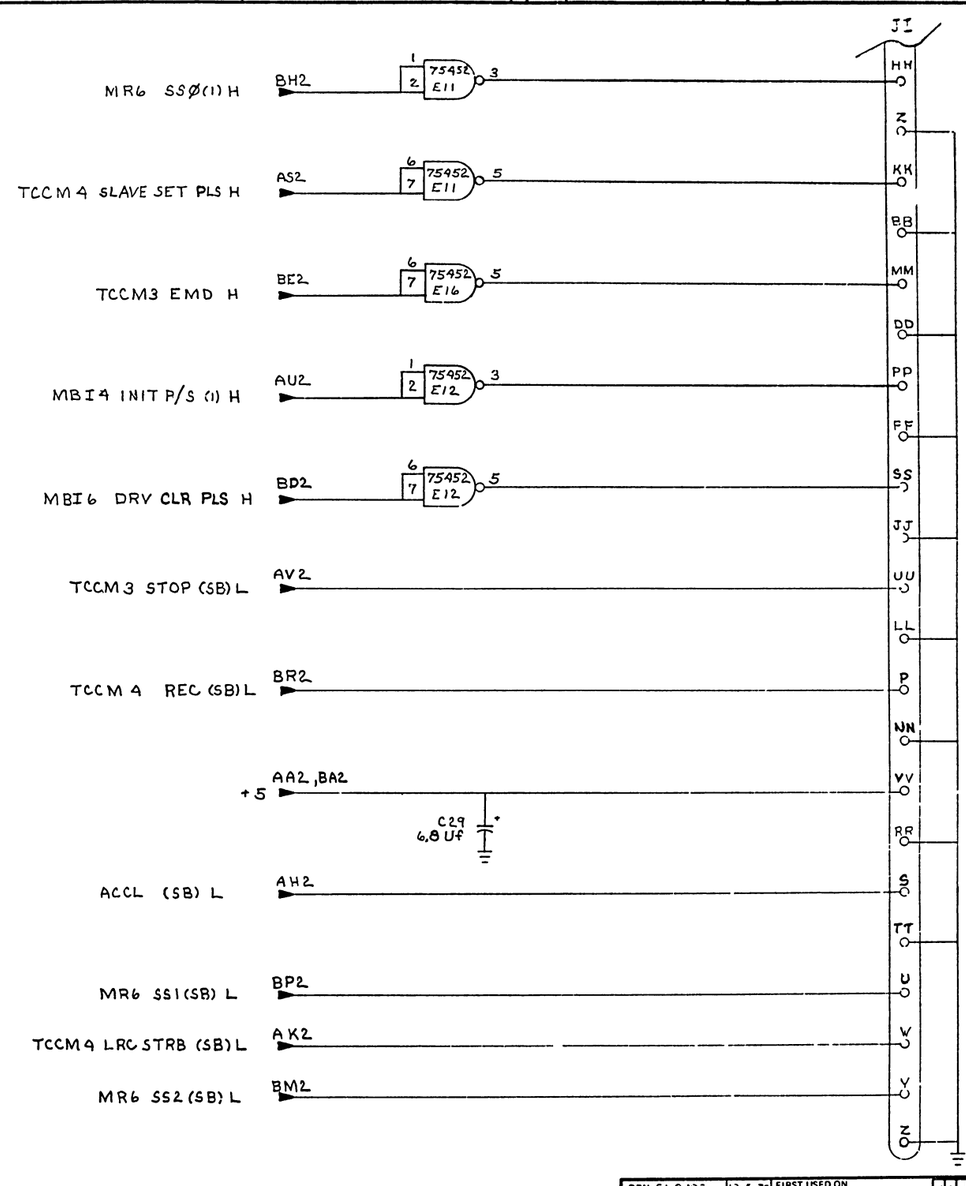


REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
16 BIT - (BF5) BIT FIDDLER	D	CS	M8906-Ø-1	D
SCALE	SHEET 5 OF 5		DIST	

DEC FORM NO DRD 138





DRN. G.MORRIS	10-5-76	FIRST USED ON	digital
CHK B. [illegible]	4 JUN 77	TMØ3	
ENG. JIM VINCENT	4 JUN 77	TITLE	
PROJ ENG. VINCENT	4 JUN 77	TMØ3 CONTROL & WRITE DRIVERS (CWD2)	
PROD [illegible]	4 JUN 77		
NEXT HIGHER ASSY.			
B-DD-M8937-Ø-Ø		SIZE D CODE CS NUMBER M8937-Ø-1 REV B	
SCALE			
SHEET 1 OF 2		DIST	

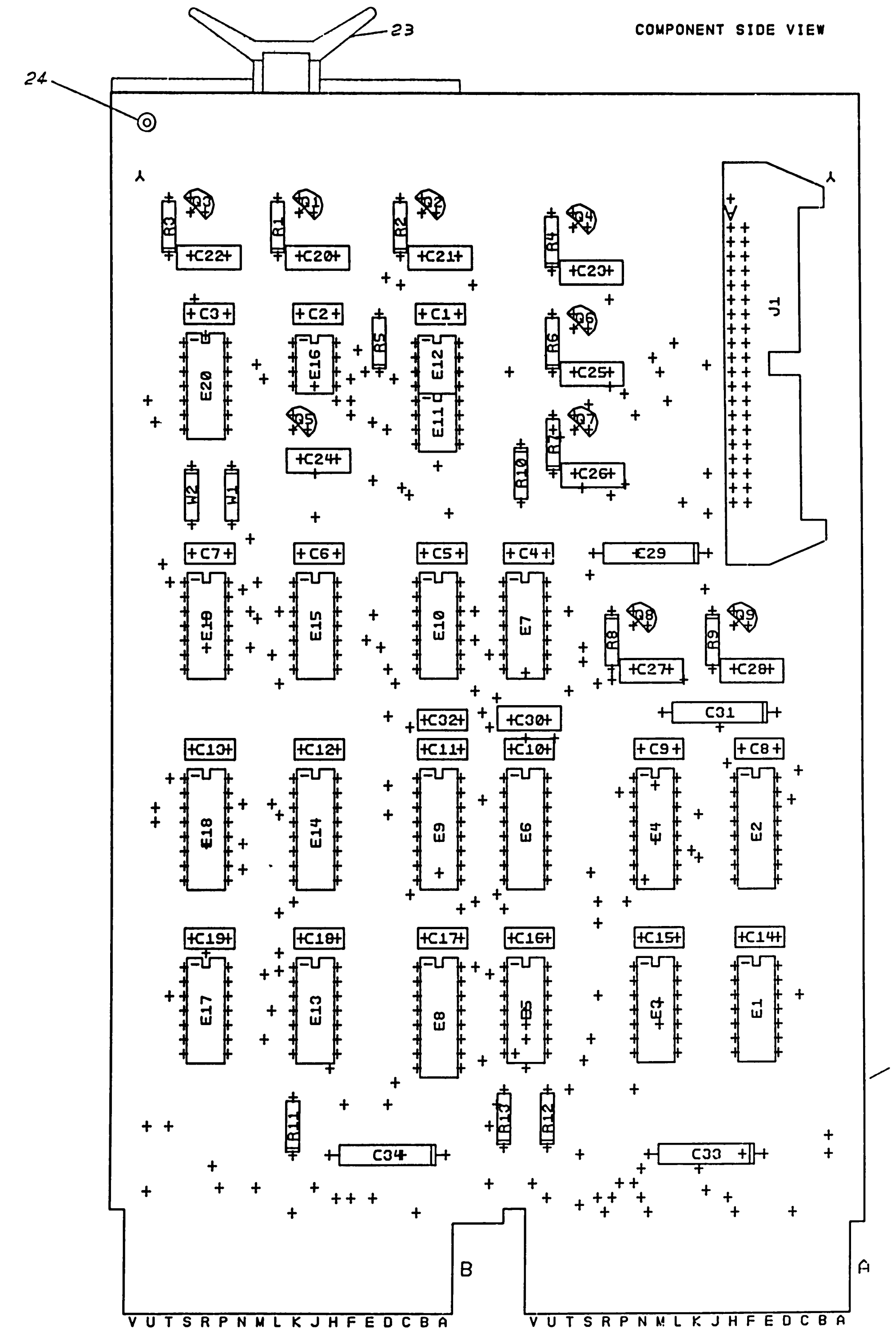
REVISIONS: REV. | CHANGE NO. | CHK

TCCM4 2ØØ BPIH
AU1
7403 E7
R1Ø 1ØØ
C3Ø 1ØØPf
+3V
74161 CLR E9 LD CLK CNTEN CRYEN CO
D0 D1 D2 D3 R0(1) R1(1) R2(1) R3(1)
74153 E6
STB1 STB0 D0 C0 B0 A0 D1 C1 B1 A1 S1 S0 f1 fØ
BB2 CWD3 TAPE SPEED CLK H
AE2 CWD3 75 IPS L
AF2 CWD3 45 IPS L
AD2 CWD3 12.5 IPS L
BH1 CWD3 16ØØ BPI H
BF1 CWD3 BUS 16ØØ BPI L
7400 E1
7404 E19
75452 E16
SB DT 1 H
AM1
SB DT 2 H
AD1
MR5 MAINT Ø(1) H
BL2
TCCM3 STOP(SB)L
AV2
TCCM3 READING H
BK2
MBI5 WRITE L
AP2
7408 E3
7408 E13
MBI6 DRV SET PLS H
AN1
SBB2 BOT H
AM2
MBI4 MAS CLR L
AV1
TCPE 4 IDB H
BC1
7474 E5
MR6 DEN 2L
BP1
NOTE
TO DISABLE AUTO-DENSITY, REMOVE W1 AND ADD W2.
W1
W2
7402 E17
BR1 CWD3 16ØØ BPI L
+5V
AV2,BA2
C31,C33,C34 6.8Uf
C1THRUC19,C32 .ØØ1Uf
AC2,AT1 BC2,BT1
R12 22Ø
R13 33Ø
BA1
74175 E4
MR6 SSØ(1) H
BH2
MR6 SSI(SB) L
BP2
MR6 SS2(SB) L
BM2
7485 E2
IN>IN<IN=
A>B A=B A<B
AL2
CWD3 SAC L
74161 E14
TCPE 3 CNRZ4 RDSL
BN1
R11 *5 47Ø
7404 E2Ø
74157 E18
B3 A3 B2 A2 B1 A1 B0 A0 f3 f2 f1 fØ STB SØ
BV2
CWD3 RDS H
NOTE
SIGNAL RDS IS GENERATED ON M8905 MODULE ALSO IF TMØ3 BACK PANEL IS USED, SIGNAL MR5 RDS H IS NOT USED AND CWD3 RDS H IS USED
MR5 WRPØ+WRP 4 L
BS2

REVISIONS		
CHK	CHANGE NO	REV.

TITLE TMØ3 CONTROL & WRITE DRIVERS (CWD 3)
SIZE D CODE CS NUMBER M8937-Ø-1 REV B
SCALE — SHEET 2 OF 2 DIST

COMPONENT SIDE VIEW



NOTES:

REV	
CHANGE NO	
CHK	

ETCH REV. C
P.C. DESIGN DATA BASE REV. CL

SIGNATURES	DATE
DRN. STU KLOTZLE	8NOV76
CHK'D.	
ENG.	
PROJ.ENG.	
PROD.	
SCALE 2/1	
SHT. 1 OF 3	
NEXT HIGHER ASSY. B-DD-M8937-0	

digital

TITLE TM03 CONTROL AND WRITE DRIVERS

SIZE	CODE	NUMBER	REV
D	UA	M8937-0-0	B

MS#. 104'46

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Stu Klotzle | CHECKED Lou Metzger | SECTION 1
DATE 8/28/76 | DATE 4/5/77
ENG JIM VAGIAS PER | PROJ Gordon Clifford | ISSUED SECTION 1
DATE 4 JAN 77 | DATE 4 JAN 77

NOTES: USED ON OPTION/MODEL TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION	REF DESIGNATION
	C-CS-M8937-0-1		CIRCUIT SCHEMATIC	REF	
	D-UA-M8937-0-0		UNIT ASSEMBLY	REF	
1	D-MD-5012483-0-0	5012483	ETCH BOARD	1	
2		10-00016-00	CAP, 100 PF, 100V, 5% - DM	10	C20 thru C28, C30
3		10-01610-01	CAP, .01 UF, 100V, DISC	20	C1 thru C19, C32
4		10-05306-00	CAP, 6.8 UF, 35V, 10% TANT	4	C29,C31,C33,C34
5		12-09941-02	CONN, 40 PIN (3M)	1	J1
6		13-00229-00	RES, 100 ¼W 5%	1	R10
7		13-00271-00	RES, 220 ¼W 5%	1	R12
8		13-00295-00	RES, 330 ¼W 5%	1	R13
9		13-00316-00	RES 470 ¼W 5%	1	R11
10		13-01972-00	RES, 270 ¼W 5%	9	R1 thru R9
11		15-03100-00	TRANSISTOR, 3009B	9	Q1 thru Q9
12		19-05547-00	I.C. 7474	1	E5
13		19-05575-00	I.C. 7400	3	E1, E10, E15
14		19-09004-00	I.C. 7402	1	E17
15		19-09686-00	I.C. 7404	2	E19, E20
16		19-09937-00	I.C. 74153	1	E6

E.C.O. NO.

TITLE: TM03 CONTROL AND WRITE DRIVERS

ASSY NO. D-UA-M8937-0-0 | SIZE B | CODE PL | NUMBER M8937-0-0 | REV. B

SHEET 1 OF 2

INSERTION PARTS LIST DATA BASE REV B

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY Stu Klotzle
DATE 8/28/76
ENG JIM VAGIAS
DATE 4 JAN 77

CHECKED Tom Hoggan
DATE 4 JAN 77
PRO. Gordon Dillard
DATE 4 JAN 77

SECTION 1
ISSUED SECTION 1

QUANTITY / VARIATION

NOTES:
USED ON OPTION/MODEL-TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
17		19-10155-00	I.C. 7408	3	E3,E7,E13
18		19-10224-00	I.C. 7485	1	E2
19		19-10645-00	I.C. 75452	3	E11,E12,E16
20		19-10650-00	I.C. 74161	3	E8,E9,E14
21		19-10651-00	I.C. 74175	1	E4
22		19-10655-00	I.C.74157	1	E18
23		9008337-06	HANDLE, FLIP CHIP	2	
24		9006732-00	EYELET	4	
25					
26					
27		90-09185-00	JUMPER, WIRE, WHT INS.	2	W1,W2

E.C.O. NO.

TITLE: TM03 CONTROL AND WRITE DRIVERS

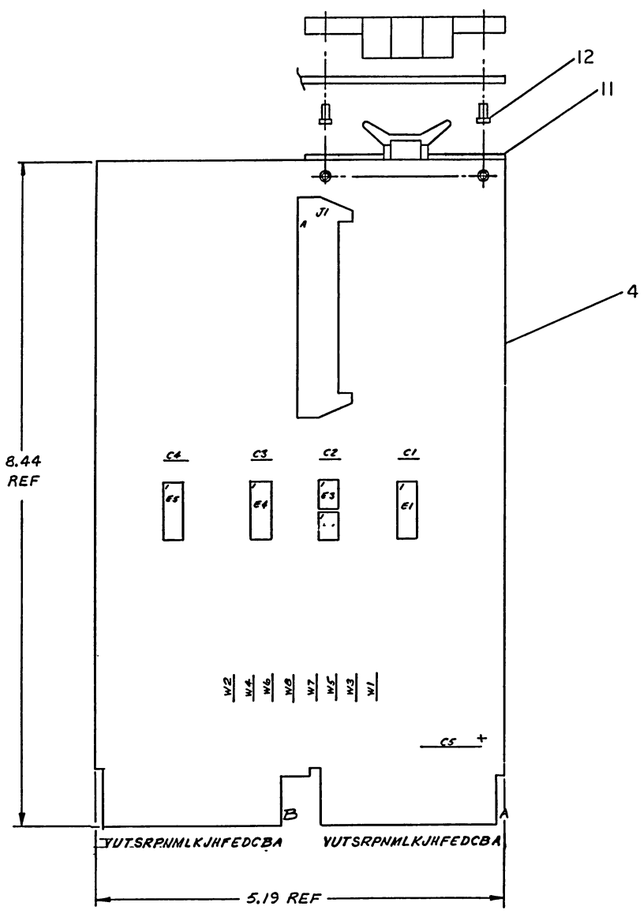
ASSY NO. D-UA-M8937-0-0
SHEET 2 OF 2

SIZE B | CODE PL | NUMBER M8937-0-0 | REV. B

INSERTION PARTS LIST DATA BASE REV B

EN-0140A-1G R27G(325) DRB 125

NOTES:



REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8908-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8908-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8908-0-6	3
1		ETCHED CIRCUIT BOARD	50/0982	4
4	C1 THRU C4	CAP .01UF 100V 20% DISC	1001610-01	5
1	C5	CAP 6.8UF 35V 10% TANT	1005306	6
1	J1	CONN 40 PIN	1209941-02	7
2	E2, E3	IC 75452	1910645-01	8
3	E1, E4, E5	IC 11380	1911113	9
8	W1 THRU W8	JUMPER, INSULATED	9009185	10
2		HANDLE, FLIP-CHIP MAGENTA	9008337-6	11
4		EYELET	9006732	12

IC TYPE	GND	+ 5V
75452	4	8
11380	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO	DRAWN	DATE
*	ORIGINATED	J. HESS	1-25-77
A	M8908-00001	H. DRAB	6-1-76
B	M8908-00002	H. DRAB	7-15-76
C	M8908-00003	J. HESS	6-14-77

FIRST USED ON OPTION MODEL: TU16

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

ETCH BOARD REV B

DEC NO	EIA NO	DEC NO	EIA NO.

SEMICONDUCTOR CONVERSION CHART

		DATE
DRN.		2/27/74
CHK'D		3/5/74
ENGR		3/5/74
PROJ. ENG.		3-6-74
PROD		3-7-74

NEXT HIGHER ASSY

SCALE —/—

SHEET 1 OF 2

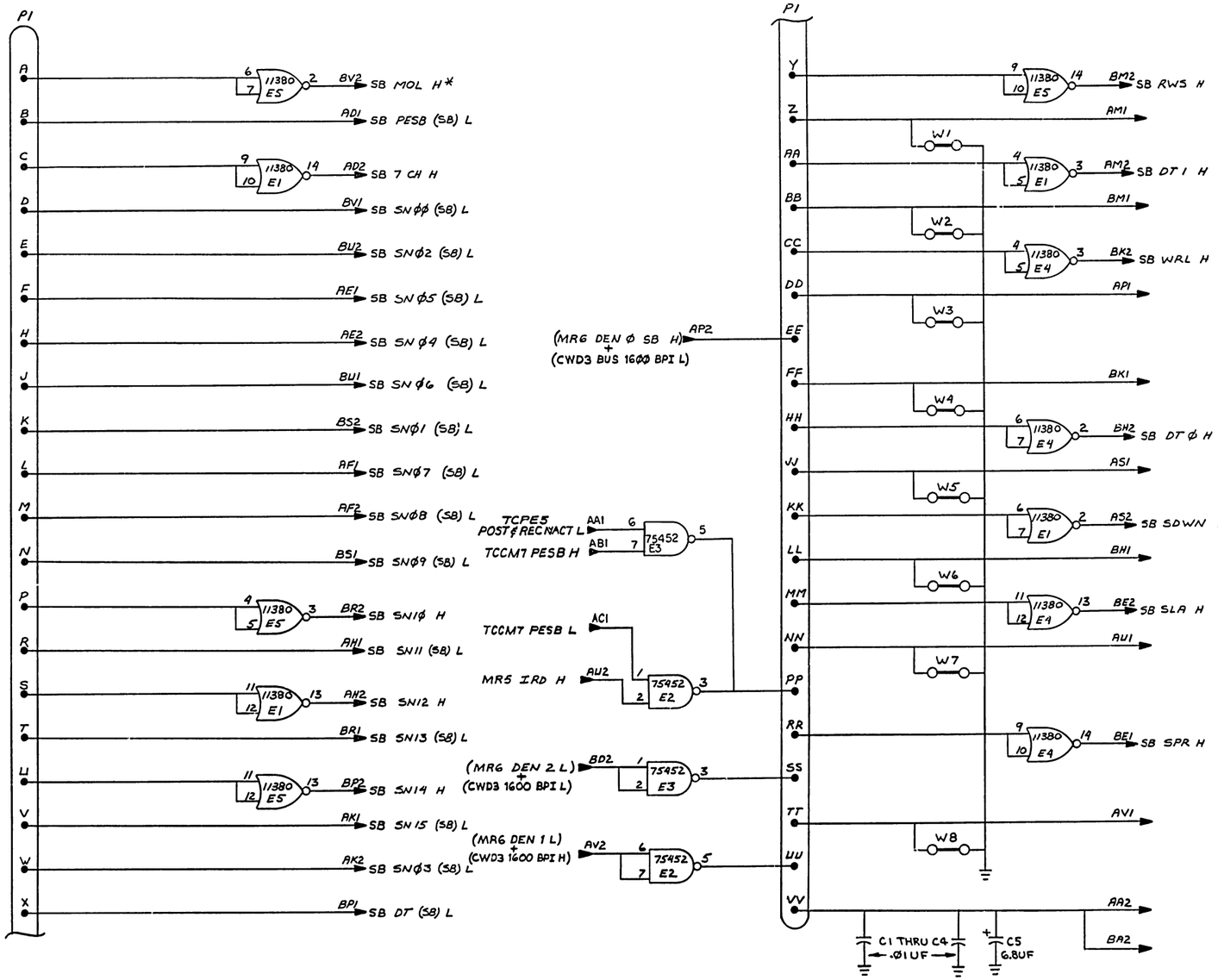
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: RECEIVER TERMINATOR

SIZE	CODE	NUMBER	REV.
D	DCS	M8908-0-1	C

DIST.

DCS M8908-0-1 C



* NOTE: ALL SB SIGNALS ORIGINATE IN SELECTED SLAVE

* THE 3 DENSITY SELECT LINES (IE. PINS AP2, BD2, AV2) ARE WIRED TO THE BACKPLANE AS FOLLOWS:
(1) IF MODULE IS USED IN TMΦ2 SIGNAL ORIGINATES ON PRINT MRG.
(2) IF MODULE IS USED IN TMΦ3 SIGNAL ORIGINATES ON PRINT CWD3.

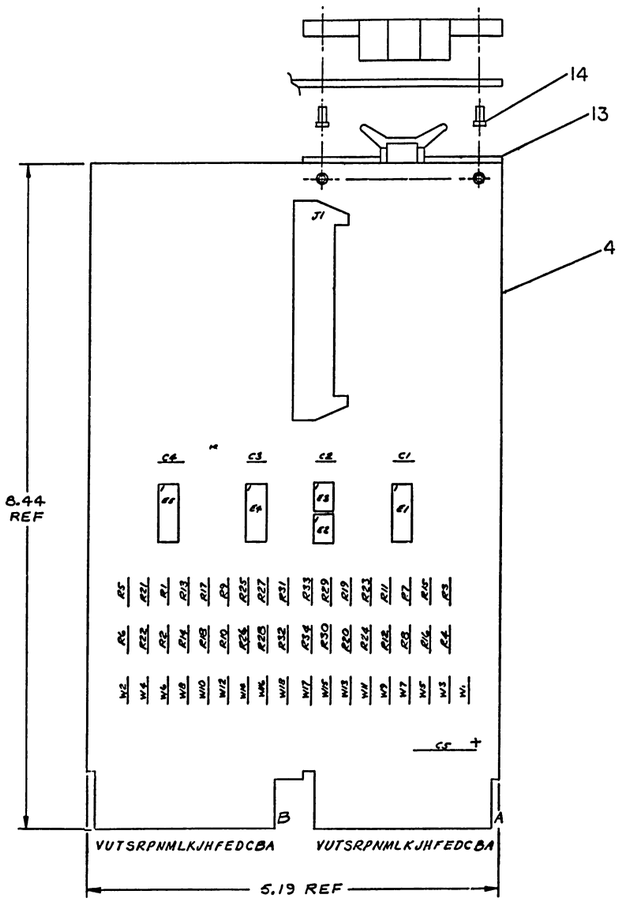
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
RECEIVER TERMINATOR	D	CS	M8908-Ø-1	C
SCALE	SHEET 2 OF 2		DIST	

DEC FORM NO DRD 138

C M8908-Ø-1 D CS

NOTES:



REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8908-B-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8908-YA-5	2
REF		MODULE ECO HISTORY	B-MH-M8908-YA-6	3
1		ETCHED CIRCUIT BOARD	5010982	4
4	C1 THRU C4	CAP .01UF 100V 20% DISC	1001610-01	5
1	C5	CAP 6.8UF 35V 10% TANT	1005306	6
1	J1	CONN 40 PIN	1209941-02	7
10	R1, R3, R5, R7, R9, R11, R13, R15, R17, R19	RES 120 1/4W, 5%	1300247	8
17	R2, R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R30, R32, R34	RES 220 1/4W, 5%	1300271	9
2	E2, E3	IC 75452	1910645-01	10
3	E1, E4, E5	IC 11380	1911113	11
18	W1 THRU W18	JUMPER, INSULATED	9009185	12
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	13
4		EYELET	9006732	14
7	R21, R23, R25, R27, R29, R31, R33	RES 150 1/4W 5%	1300250	15
~~1~~	~~R35~~	~~RES 1K 1/4W 5%~~	~~1300388~~	~~16~~

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

75452	4	8
11380	1	8
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO	
A	M8908YA00001	5-21-74 H. DRAB
B	M8908YA00002	5-21-74 H DRAB

REVISIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: B

DEC NO	EIA NO	DEC NO.	EIA NO

SEMICONDUCTOR CONVERSION CHART

DRN		DATE 2/27/74
CHK'D		DATE 3/5/74
ENG		DATE 3/5/74
PROJ ENG		DATE 3-6-74
PROG		DATE 7-7-74

NEXT HIGHER ASSY

SCALE: 1/1

SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

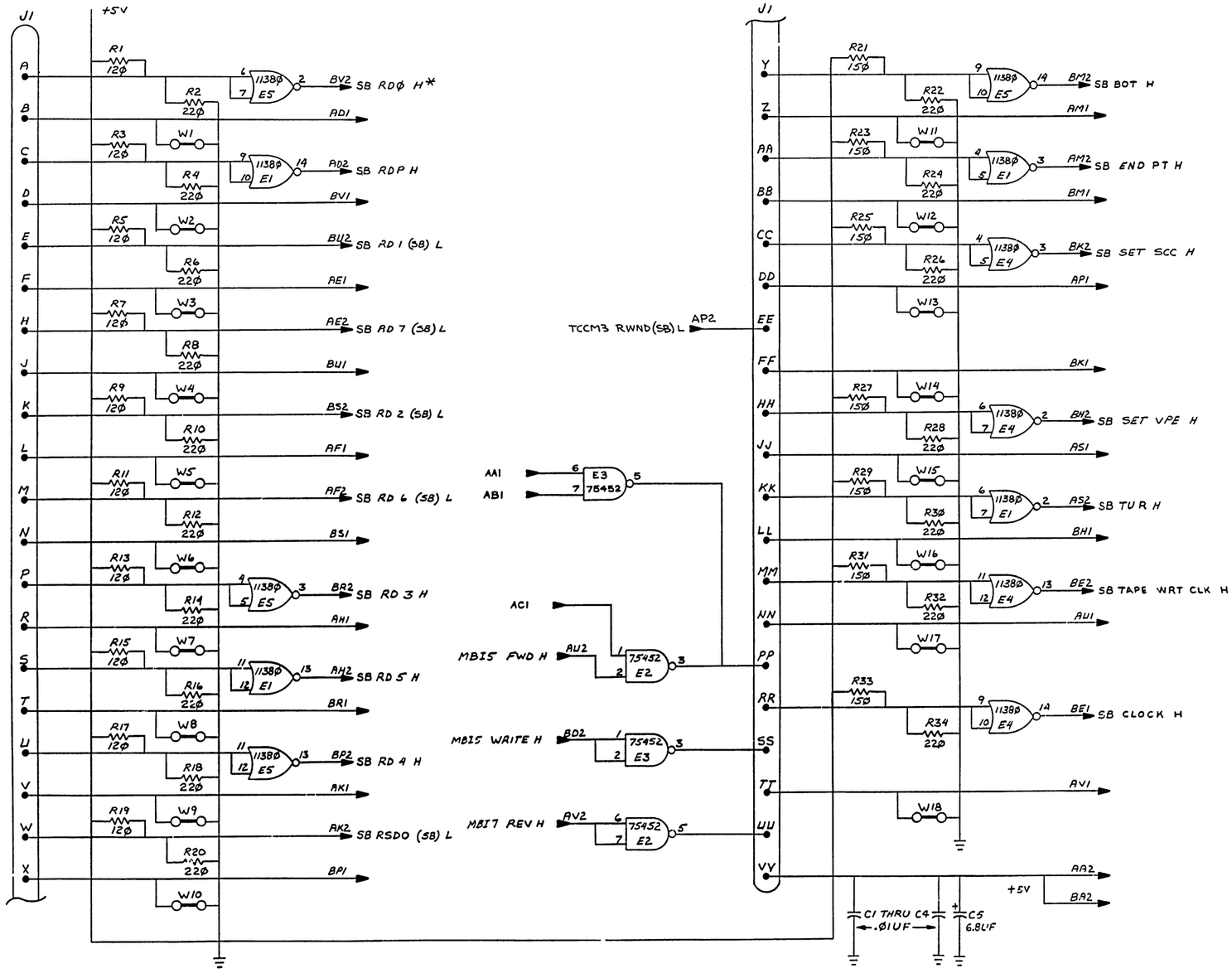
TITLE: RECEIVER TERMINATOR

SIZE D | CODE CS | NUMBER M8908-YA-1 | REV. B

DIST

DEC FORM NO DRD 131 B

DCS M8908-YA-1 B 1



*NOTE: ALL SB SIGNALS EXCEPT "SETSSC H" ORIGINATE IN SELECTED SLAVE. "SETSSC H" ORIGINATES IN ANY ON-LINE SLAVE.

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
RECEIVER TERMINATOR	D	CS	M8908-YA-1	B
SCALE	SHEET 2 OF 2		DIST	

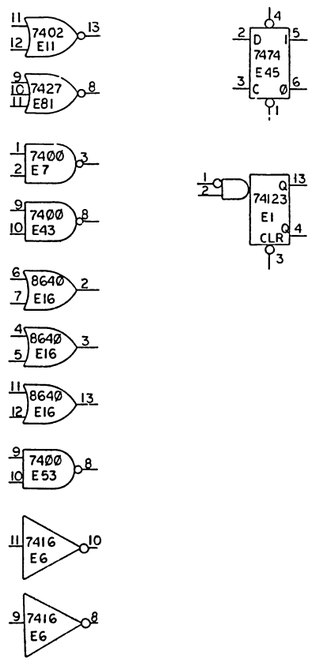
DEC FORM NO

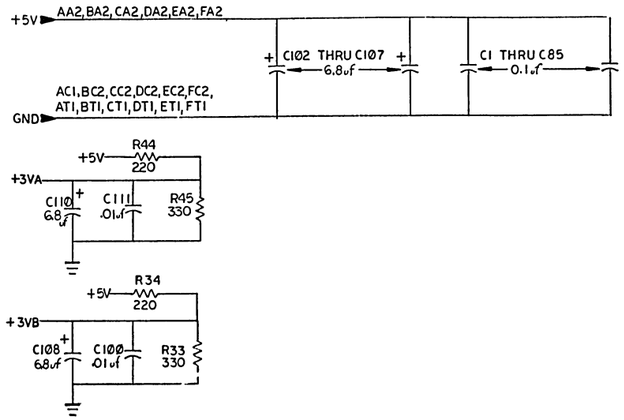
M8908-YA-1 B DCS 100-1715

NOTES:

1. UNLESS OTHER WISE SPECIFIED:
   A. RESISTANCE IN OHMS
   B. CAPACITANCE IN MICROFARADS

SPARE IC'S





DEC 7475	12	5
DEC 7485	8	16
DEC 74123	8	16
DEC 74145	8	16
DEC 74151	8	16
DEC 74154	12	24
DEC 74155	8	16
DEC 74193	8	16
DEC 384	1	8
DEC 8234	8	16
IC TYPE	GND	+5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: TU16

PARTS LIST

QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

ETCH BOARD REV. C

DEC NO.	EIA NO.	DEC NO.	EIA NO.
		D664	IN3606

NEXT HIGHER ASSY

SEMICONDUCTOR CONVERSION CHART

REV.	CHANGE NO.	CHK	DRN.	DATE
J	M8909-YA-3	GPO	M. PORRIER	11-8-73
			F. CANBERRY	1-22-74
			H. DRAB	1-21-74
			H. DRAB	1-29-74
			R. KOCUON	1-29-74

REVISIONS

H. DRAB

digital

TITLE: MASS BUS (MBI 1) INTERFACE

SIZE D | CODE CS | NUMBER M8909-YA-1 | REV. J

SCALE

SHEET 1 OF 11

DIST.

DEC FORM NO. BBD 135-B

B.M. A1167

+5V
R5 1K R4 1K R4 1K
SSW0 US2 BE1 — 7416 E6
SSW1 US1 BL1 — 7416 E6
SSW1 USØ BJ2 — 7416 E6
MBI 4 INIT PLS (1) H — FD1 — 74Ø2 E8
MB1 CTOD H — AN1
+3V8
7474 E1Ø — BB1 — MBI 2 TRA (1) L — 7417 E25 — AF2 — MBI 2 ECP H
R33 1K
7474 E5 — CL1 — MBI 2 LCTOD (1) H — 7417 E25 — AJ2 — MBI 2 ECS H
R36 1K
+3VB

7485 E22
MB3 DSØ — BM1
MB3 DS1 — BK1
MB3 DS2 — BJ1
CB2 +5V R46 1K
DS ENBL L
A>B A=B A<B
IN> INK IA=
+3VB

74Ø2 E8
74Ø4 E13 — MBI 2 R4 H
MB3 DEM H — AU2 — 74ØØ E3 — MBI 2 ASYC WRT L
MBI 4 MUSS FAIL L — 74Ø8 E12
R25 22K +5V C95 10PF
74123 E4 200NS — AL1 — MBI 2 PULSE (1) H
R48 5.6K +5V C112 10PF
74123 E4 70NS
7427 E17 — 74ØØ E7 — CM2 — MBI 2 REG WRT L

74ØØ E3 — 74Ø2 E2 — MBI 5 GO (1) L — 74Ø8 E12 — MBI 2 SET AMR H

74154 E14
fØØ — AL2 — MBI 2 RØ L
fØ1 — AM1 — MBI 2 R1 L
fØ2 — MBI 2 R2 L
fØ3 — FH2 — MBI 2 R3 L
fØ4 — AM1 — MBI 2 R4 L
fØ5 — MBI 2 R5 L
fØ6 — AR1 — MBI 2 R6 L
fØ7 — AD1 — MBI 2 R7 L
fØ8 — AE1 — MBI 2 RIØ L
fØ9 — AF1 — MBI 2 R11 L
f1Ø
f11
f12
f13
f14
f15
STB1 ST2Ø
MB2 RSØ H — AB2
MB2 RS1 H — AU1
MB2 RS2 H — AT2
MB1 RS3 H — AS2
MB1 RS4 H — AV2

743Ø E9 — 74Ø4 E13 — MBI 2 SET ILR H

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 2)	D	CS	M89Ø9-YA-1	J
SCALE	SHEET 2 OF 11	DIST.		

DEC FORM NO DSD 137

MBI 2 R4 L (AM1)
MBI 2 REG WRT L CM2
384 E36

MB2 C7 BF2
MB2 C6 BD2
MB2 C5 BB2
MB1 C4 BR1
MB1 C3 BU1
MB1 C2 BS2
MB1 C1 AD2
MB1 CØ AE2
S18 74151 E77
S2 S1 SØ

MBI 5 WRT RØØ H
MBI 1Ø COMPER L
741Ø E56

MBI 4 MAS CLR L (DS2)
+3VA
744Ø E57

74Ø2 E51
74Ø2 E51
74Ø4 E41
CC1 MBI 3 ATA H
CV1 MBI 3 ATTN L

741Ø E56

74Ø4 E41
MBI 3 END PT L

SB END PT H CF1
MBI 5 STRBATACHK (1) H
74ØØ E52

MBI 5 RWND L
MBI 5 ERASE L
MBI 5 WFMK L
744Ø E57
74ØØ E52

74145 E76
MBI 2 US Ø (BJ2)
MBI 2 US 1 (BL1)
MBI 2 US 2 (BE1)
C MUX 7
C MUX 6
C MUX 5
C MUX 4
C MUX 3
C MUX 2
C MUX 1
C MUX Ø
SEE NOTE

MBI 5 SPACE H
74Ø2 E51

+5V
R2 1ØK
C87 27PF
TCCM7 SSC L FS1
MBI 1Ø COMPER L
74ØØ E52
MBI 5 GO BUF H
74123 E46 9ØNS
+3VA

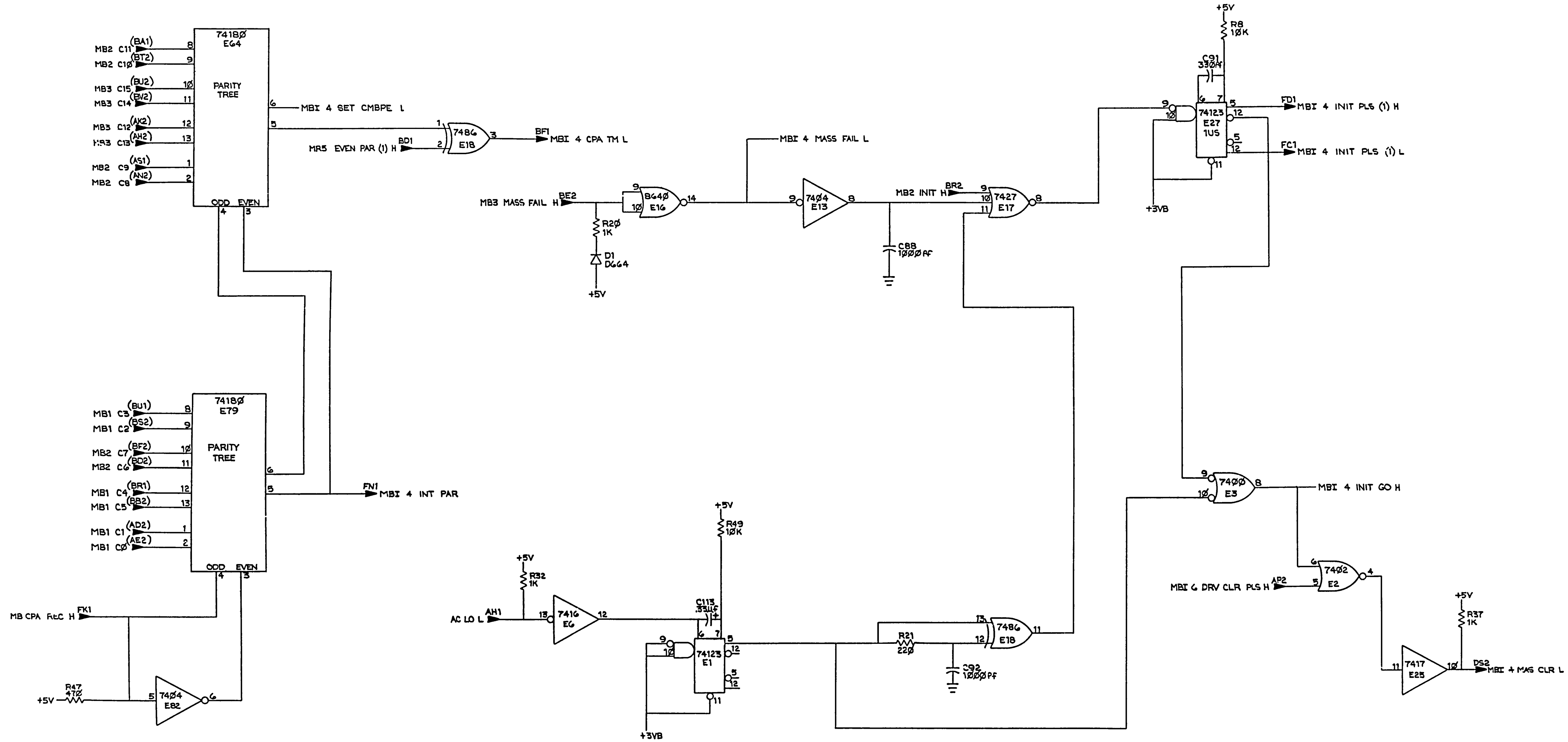
MBI 2 R4 H
+3VA
741Ø E56

NOTE:
CMUX LINES ARE GENERATED ON M89Ø9, M89Ø:', M89Ø5

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 3)	D	CS	M89Ø9-YA-1	J
SCALE —	SHEET 3 OF 11	DIST.		

DEC FORM NO. DRD 137



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: MASS BUS INTERFACE (MBI 4)

SIZE: D | CODE: CS | NUMBER: M8909-YA-1 | REV.: J

SCALE: — | SHEET 4 OF 11

+5V
R40 1K
7417 E25
CK2 MBI 5 GO BUF H

+3VB
7474 E15
MBI 5 GO (1) H
FB1 MBI 5 GO (1) L
MBI 6 CLR GO L

+5V
R27 10K
+3VB
C97 27PF
9ØNS 74123 E19
MBI 5 STRBATACHK (1) H
+3VB

MBI 2 REG WRT L
MBI 2 RØ L
74ØØ E8
MBI 4 SET CMBPE L
74ØØ E7
MBI 5 WRT RØØ H

+5V
R10 1K
STDB STDA
DB
DA
74155 EG2
FB3 EJ2 MBI 5 AWND L
FB2 MBI 5 DAV CLR L
FB1 FB2 MBI 5 WFMK L
FBØ
FA3 MBI 5 SET IUF L
FA2 MBI 5 NOP L
FA1 FE1 MBI 5 ERASE L
FAØ EF2 MBI 5 REV L
S1 SØ

+5V
R11 1K
IM-56ØØ EG7
MBI 5 CHK IFC H
+5V
R9 1K
AB1 MBI 5 DATA XFER H
+5V
R14 1K

+3VB
7474 E15
MB C1
EM2 MBI 5 F1 (1) H
+3VB

MB C2
7475 E72
EN2 MBI 5 F2 (1) H

MB C3
7475 E72
ER2 MBI 5 F3 (1) H

MB C4
7475 E72
ES2 MBI 5 F4 (1) H

MB C5
7475 E72
ET2 MBI 5 F5 (1) H

+5V
R12 1K
+5V
R15 1K
+5V
R13 1K
74Ø2 F51
MBI 5 WRITE COMMAND H
DT2 MBI 5 SPACE H
74Ø4 E41
MBI 5 SPACE L
AR2 MBI 5 WRITE H
74Ø4 E41
AP1 MBI 5 WRITE L

E67 TRUTH TABLE

ADDRESS					OUTPUTS								
14	13	12	11	1Ø	9	7	6	5	4	3	2	1
0	0	0	0	0	0	0	0	0	0	1	1	0
0	0	0	0	1	0	0	0	0	0	1	1	1
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0	0	0	1	1	0	0	0	0	0	1	1	0
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0	0	1	0	1	0	0	0	0	0	1	1	0
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1	1	1	0	0	1	0	0	0	0	1	1	0
1	1	1	0	1	0	0	0	0	0	1	1	1
1	1	1	1	0	0	0	0	0	0	1	1	1
1	1	1	1	1	0	0	0	0	0	1	1	0

+3VB
7474 E2Ø
MBI 6 DRV SET PLS H
CR2 MBI 5 FWD H
7486 E16
MBI 5 SAM DIR H

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	MASS BUS INTERFACE (MBI 5)	SIZE	CODE	NUMBER	REV.
SCALE —ff—	SHEET 5 OF 11	D	CS	M8909-YA-1	J
		DIST.			

DEC FORM NO ORD 1237

MBI 7 COMXNG (1) H
MBI 5 SPACE H
TCCM 7 TMRK H
MBI 8 FCOF (1) H
7427 E17
7440 E28
MBI 7 ISSUE SPLS H → L
7400 E32
74123 E27
P7 6.8K
C90 270 PF
DC LO L
MBI 6 SET PLS (1) H
MBI 5 DRV CLR L
7427 E38
AP2 MBI 6 DRV CLR PLS H
7400 E32
7402 E39
CS2 MBI 6 DRV SET PLS H
384 E34
MBI 3 END PT L
7400 E7
7408 E26
7400 E32
TCCM 3 STOP (Ø) H
74123 E23
R22 6.8K
C93 27 PF
+5V
+3VB
7427 E24
R23 6.8K
C94 27 PF
MBI 7 COMXNG (1) L
MBI 6 SET PLS (1) H
7400 E32
MBI 7 OCC TM (1) H
MBI 10 COMPER L
MBI 10 BER+ ILF H
SB BOTH
7402 E11
MBI 9 END EBL H
MBI 6 DRV CLR PLS H
384 E36
MBI 5 NOP L
MBI 7 COMRDY (1) L
7402 E2
MBI 4 INIT GO H
7402 E2
7408 E12
MBI 6 CLR GO L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 6)	D	CS	M8909-YA-1	J
SCALE	SHEET 6 OF 11	DIST.		

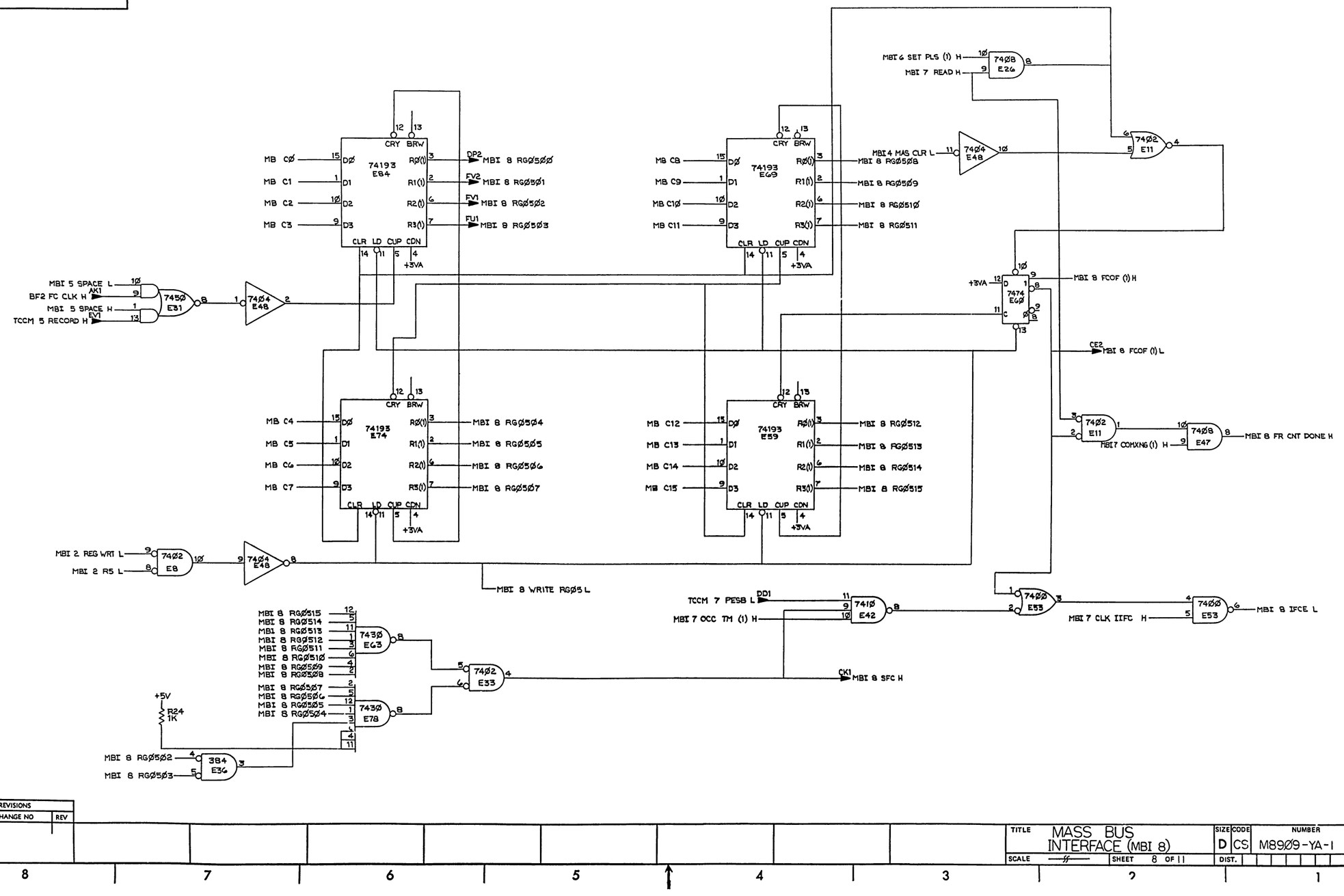
DEC FORM NO. DRD 137

MBI 5 GO (1) H
74123 E19 25 NS
MBI 7 COMRDY (1) H
MBI 7 COMRDY (1) L
+5V R26 10K C96 82 PF +3VB
+3VB
MBI 1Ø COMPER H
MBI 5 WRT RØØ H
7474 E3Ø
MBI 7 PREV ER (1) H
74Ø2 E49
MBI 7 CHK ER L
74Ø4 E48
+3VA
74123 E46 40NS
+5V R1 68K C86 27PF +3VA
MBI 7 CHK ER H
MB OCC REC H DB1
7410 E42
MBI 7 PREV OCC L
MBI 5 DATA XFERH
+3VB
7474 E2Ø
DC1
BP1
MBI 7 OCC TM (1) H
MBI 7 OCC TM (1) L
MBI 7 READ H
MBI 5 WRITE L
7408 E47
7417 E25
+5V R39 1K
AM2
MBI 7 EDS H
MBI 5 CHK IFC H
+5V R16 1K
7408 E44
MBI 7 CLK IFC H
MBI 5 SET ILF L
MBI 7 CHK ER L
7402 E49
7404 E37
MBI 7 SET ILF F/F L
MBI 5 REV L
7404 E41
EG1
MBI 7 REV H
MBI 5 GO (1) H
MBI 8 IFCE L
7408 E47
MBI 7 SET NEF F/F L
7400 E52
MBI 5 WRITE COMMAND H
SB WRL H BM2
SB BOT H BM2
7450 E31
7400 E53
TCCM 3 AEMD (1) H CJ1
TCCM 4 MOL L DA1
7404 E13
7402 E33
MBI 7 MOL L/AEMD (1) H
MBI 5 DRV CLR L
7408 E71
7400 E43
MBI7 RIP H
8640 E16
MBI 7 SET UNS L
MBI 6 SET PLS L
MBI 5 GO BUF H
7474 E4Ø
MBI 7 SET OPI DLY (1) H
FP2
MBI 7 SET OPI DLY (1) L
+3VB
7474 E3Ø
MBI 7 COMXNG (1) H
MBI 7 COMXNG (1) L
TCCM 7 PIP H CV2
MBI 5 WRITE RØØ H
MBI7 COM RDY (1) H
7408 E44
7402 E39
MBI 5 GO (1) L
TCCM 5 RECORD H EV1
7402 E39
MBI 9 BERR ILFL
7408 E71
MBI 6 DRV SET PLS H
7404 E37
CP1
MBI 7 DRV SET PLS L
SB TUR H CN1
7404 E37
MR6 DEN2 (1) H DN2
TCCM 7 PESB L DD1
7486 E18
7402 E66
MBI 5 WRITE L
7402 E66
MB RUN H BN1
MBI 7 OCC TM (1) L
7402 E39
7427 E58
7404 E37
MBI 7 ISSUE SPLS H → L
DS4 SET NEF H EU2
RS2 1K 0+5V
MBI 7 RIP H
MBI 4 MAS CLR L
7408 E71
MBI 7 CLEAR ERRORS L
+3VA
MBI 5 RWND L
MBI 5 F1 (1) H
MBI 5 F2 (1) H
7427 E61
7474 E45
CU2
MBI 7 BRIP (1) L
MBI 7 COM RDY (1) H
MBI 6 CLR GO L
MBI 5 DRV CLR L
7404 E37
TCCM 7 BDWN L CR1
7427 E38
MBI 5 SAM DIR H
CE1
7408 E26

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 7)	D	CS	M8909-YA-1	J
SCALE	SHEET 7 OF 11	DIST.		

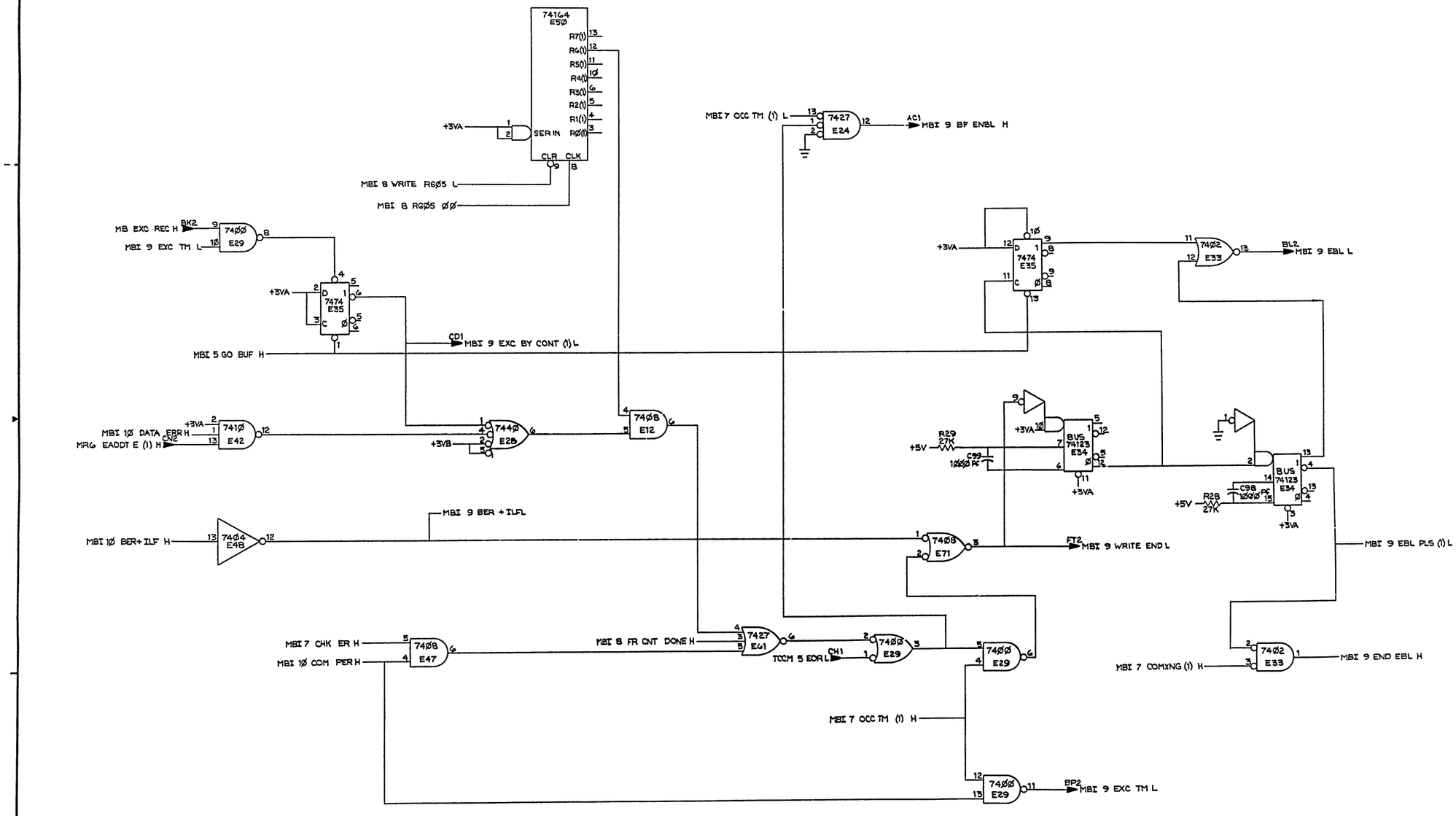
DEC FOS NO. DRD 13



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 8)	D	CS	M8909-YA-1	J
SCALE	SHEET 8 OF 11	DIST.		

DEC FORM NO DRD 137



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 9)	D	CS	M8909-YA-1	J
SCALE	SHEET 9 OF 11	DIST.		

DEC FORM NO. 940 137

8234 TRUTH TABLE

S5	SØ	F
0	0	B
0	1	A
1	0	B
1	1	H

* CMUX LINES ARE ORIGINATED ON M89Ø9, M89Ø3 & M89Ø5

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 1Ø)	D	CS	M89Ø9-YA-1	J
SCALE —	SHEET 1Ø OF 11	DIST.		

DEC FORM NO. DRB 137

MBI 7 CLEAR ERRORS L — 7417 E25 — +5V R35 1K

MBI 7 OCC TM (1) H
BF3 BF FMTE (1) H — CA1 — 7400 E43

MBI 2 SET ILR H
MBI 2 PULSE (1) H — 7400 E3

+5V R42 220 — C109 6.8µf — C101 .01 — R41 330

MBI 7 SET ILF F/F L — 7474 E85 ILF — MBI 11 ILF (1) H / MBI 11 ILF (1) L

7474 E85 ILR — MBI 11 ILR H / MB 11 ILR (1) L

7474 E80 RMR — MBI 11 RMR (1) H / MBI 11 RMP (1) L

+5V R43 1K — W4

7474 E80 CPAR — MBI 11 PAR (1) H / MBI 11 PAR (1) L

7474 E75 FMTE — MBI 11 FMTE (1) H / MBI 11 FMTE (1) L

7474 E75 DPAR — MBI 11 DPAR (1) H / MBI 11 DPAR (1) L

MBI 2 SET RMR H — 7400 E43

MBI 2 ASYC WRT L — 7404 E48

BF 3 SET D PAR H — FP1 — 7404 E13

MBI 4 SET CMBPE L — 7402 E49

7402 E49

MBI 7 SET UNS L
AC LO L — AH1 — 7408 E44

BF 2 SET DTE L — DF1
MBI 7 PREV OCC L — 7408 E44

TCCM 5 SET OPI L — ED2

MBI 7 SET NEF F/F L

MBI 7 SET OPI DLY (1) H

MB RUN H — BN1
MBI 9 EBL PLS (1) L — 7474 E70 FCE — MBI 11 FCE (1) H / MBI 11 FCE L (1) L

7474 E70 NEF — MBI 11 NEF (1) H / MBI 11 NEF (1) L

7474 E65 DTE — MBI 11 DTE (1) H / MBI 11 DTE (1) L

TCCM 5 7 SEC DLY T.O. L→H — FU2 — 7474 E65 OPI — DB2 — MBI 11 OPI (1) H / MBI 11 OPI (1) L

7474 E60 UNS — MBI 11 UNS (1) H / MBI 11 UNS (1) L

MBI 5 SPACE L
MBI 6 CLR GO L
MBI 8 F COF (1) H — 7427 E61 — 7404 E41

TCCM 5 CLR OPI L — DU1 — 7400 E7

7402 E11

REVISIONS		
CHK	CHANGE NO	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MASS BUS INTERFACE (MBI 11)	D	CS	M8909-YA-1	J
SCALE — SHEET 11 OF 11	DIST.			

NOTES:
1. TO ENABLE READING RECORDS LESS THAN 10 CHARACTERS W2 MUST BE REMOVED AND W3 ADDED

+3V
CNRZ1 SHORT REC II(1)H
CNRZ1 SHORT REC II(Ø) H
CNRZ1 SHORT REC I(1)H
CNRZ1 RD RESET L
TCCM4 WRT CLK H
TCCM5 RSDO H
BN2
TCCM3 READING H
BJ2
TCCM7 PESB L
BD1
CNRZ1 RD ACTV L
BL2
CNRZ1 NO CHAR RD L
BR2
CNRZ1 TPMK WINDOW (Ø) H
CNRZ2 RD PLS(1) L
CNRZ1 RD STB LATE H
CNRZ1 CLK CECS H
W3
SEE NOTE 1
SHORT REC III
W2
BM2
CNRZ1 ENBL SHDN CNTR L
BF2
CNRZ1 REV LRCS L
BE2
CNRZ1 REV LECS H
CNRZ1 SHORT REC II(1)H
M8015 REV L
CF2
AV2
CNRZ1 REV CRCS(1) H
CNRZ2 ERDS(1) L
CNRZ1 REV CECS(Ø) H
CB2
CNRZ1 RST SHDN CNTR L
CA2, DA2
AA2, BA2
+5V
AC2, AT1
BC2, BT1
CC2, CT1
DC2, DT1
C1 THRU C6Ø
.Ø1 µF
C65, C67, C68
C69
6.8 µF
CNRZ1 RD ACTV L
CNRZ2 FWD LRCS(Ø)H
CN RZ2 RD PLS(1) H
TCCM 4 WRT CLK H

7474 E14
7474 E15
74Ø8 E26
74Ø8 E12
74Ø8 E2G
74Ø8 E19
74Ø8 E17
74Ø8 E1Ø
74Ø8 E6Ø
74Ø8 E6Ø
74Ø2 E32
74Ø5 E21
74Ø4 E3Ø
74197 E2Ø
74161 E7
74164 E9
7474 E4Ø

DRN		1/29/77	FIRST USED ON TMØ3
CHK	DTD		TITLE TAPE CONTROL (CNRZ1)
ENGR		12-12-77	
PROJ. ENGR		12-13-77	
PROJ		12-20-77	
NEXT HIGHER ASSY.			
B-DD-M8934-1A			SIZE D CODE CS NUMBER M8934-YA-1 REV *
SCALE			
SHEET 1 OF 5			DIST

REVISIONS: REV. | CHANGE NO. | CHK

CNRZ1 SHORT REC I(φ) L
CNRZ1 SHORT REC II(φ) H
CNRZ1 TPMK WINDOW(φ) H
7427 E13
74φ5 E21
BM2
CNRZ2 ENBL SHDN CNTR L
TCCM5 SHDN 8(1) H
AV1
74φφ E19
7474 E27
MBI4 INIT PLS H
DD1
TCCM3 DRV SET PLS L
AE2
TCCM4 ERROR RESET(1) L
CL2
74φ8 E26
+5V
R4 1φK
CG2 12φpf
CNRZ2 RD PLS (1) H
74123 E39
BM1
CNRZ2 ERDS (1) H
AH2
CNRZ2 ERDS(φ) H
+3V
TCCM7 PESB L
BD1
74φ1 E57
DL1
CNRZ2 TMRK L
CNRZ2 TMK H
AD2
CNRZ2 ES/IL TMRK L
CNRZ1 REV CRCS(1) L
CNRZ5 FMK CHAR L
CNRZ2 ERDS(1) H
74φ8 E26
7474 E27
+5V
CNRZ1 RD RESET L
7474 E5
AU2
CNRZ2 FWD LRCS(1) H
CNRZ2 FWD LRCS(φ) H
MBI5 FWD H
AB2
CNRZ2 FWD CRCS(1) H
CNRZ1 CLK CRCS H
CNRZ2 FWD CRCS(φ) H
BK2
TCCM3 READING L
74φ2 E11
74φ8 E10
CNRZ2 LRCS H
CNRZ1 REV LRCS L
74φφ E22
CNRZ1 REV CRCS(φ) H
74φφ E12
CNRZ2 CRCS H
74φ1 E18
AF2
CNRZ2 CLK L CK CHAR REG L
74φ2 E11
AN2
CNRZ2 CHK CHAR L
CNRZ2 ERDS(1) H
74φ5 E21
CV2
CNRZ2 RDS L
MR5 MAINT RDS L
AT2
TCCM7 PESB L
BD1
+5V
R8 1K
CWD3 45IPS L
DR2
MR5 MAINT RDS L
AT2
TCCM6 RDSO H
BN2
MR5 WRP 3 L
BU2
74φφ E47
74φφ E47
7486 E58
7474 E31
74φ2 E32
+3V
CG3 1φφpf
R6 5.6K
CNRZ2 RD PLS(1) H
CNRZ2 RD .5(1) L
74123 E39
CNRZ2 ERDS(1) L
MBI5 GO BUF H
CK2
74φ8 E34
CNRZ1 RD STRB LATE H
TCCM7 PESB L
BDI

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE APE CONTROL (CNRZ2)
SIZE D CODE CS NUMBER M8934-YA-1 REV. *
SCALE — SHEET 2 OF 5 DIST.

MBI5 WRITE H
DBI
MR5 WRP4 L
MBI5 FWD H
CS1
AR2
CNRZ3 CRC H
CNRZ3 CYCLE(3)1 L
+5V
RG 1K
ENABLE ERROR CORRECTION
W1
74ØØ E45
74Ø8 E25
742Ø E24
TCCM4 SPACE L
DPI
74Ø8 E25
DK2
CYCLE 1(1) H
CU1
CYCLE 2(1) H
CNRZ3 ENBL CYCLE 2 H
MBI7 REV H
CD2
MBIG DRV SET PLS H
AS2
74Ø8 E49
74Ø8 E29
74Ø8 E45
74Ø2 E23
R3 1ØØ
CG4 68Ø pf
74Ø4 E48
CNRZ3 CYCLE 2 & 3 H
+3V
CR1
CNRZ3 CYCLE 3(1) H
CNRZ3 CYCLE 3(1) L
CNRZ3 CYCLE 2(1) L
MBI5 GO BUFF H
CK2
74Ø4 E44
MBI9 INIT PLS(1) L
CWD3 SAC L
DD2
DB2
74Ø8 E49
74Ø8 E49
74Ø8 E1Ø
TCCM4 SPACE L
DPI
+5V
R5 22Ø
+3V
CG1 .Ø1µf
CGG 6.8µf
R7 33Ø
TCCM2 XWD P H
BF4 WDBF0 7(1) H
BF4 WDBF0 6(1) H
BF4 WDBF0 5(1) H
TCCM2 XWD 4 H
BF4 WDBF0 3(1) H
BF4 WDBF0 2(1) H
BF4 WDBF0 1(1) H
BF4 WDBF0 Ø(1) H
BC1
BE1
BB2
BK1
BD2
BL1
BF1
BJ1
BB1
85ØØ E6
CDP
CDØ
CD1
CD2
CD3
CD4
CD5
CD6
CD7
CNRZ3 CRC P(1) H
CNRZ3 CRC 7(1) H
CNRZ3 CRC 6(1) H
CNRZ3 CRC 5(1) H
CNRZ3 CRC 4(1) H
CNRZ3 CRC 3(1) H
CNRZ3 CRC 2(1) H
CNRZ3 CRC 1(1) H
CNRZ3 CRC Ø(1) H
TCCM4 WDR(1) H
TCCM4 WE R CLK
TCCM7 PESB L
TCCM5 EOR L
BF5 SET VPAR L
TCCM4 SPACE L
SCBL SET VPE H
BH2
DPI
DN1
74ØØ E47
74Ø8 E17
21 1K
CNRZ5 PARITY ERROR L
CNRZ1 REV CRCS H
CNRZ4 CLK VPE L
7427 E13
CNRZ2 TMK H
CNRZ4 CRC ERROR H
CNRZ4 REV CRCE ENBL H
BDI
74Ø8 E49
74Ø Ø E3
7432 E28
74Ø4 E3Ø
BT2
74Ø5 E36
DF1
CNRZ3 INC/VPE L
DV2
CNRZ3 CORR/CRC L
CNRZ3 CRC H
CNRZ2 FWD LRCS(Ø) H
CNRZ4 CRC ERROR L
CNRZ2 ERRS(1) H
74Ø2 E11
74Ø8 E17
TCCM7 PESB L
MR5 WRP 3 L
BV2
CNRZ3 PEF/LRC L
CNRZ2 FWD LRCS(1) L
CNRZ4 LRCC MATCH H
TCCM5 SHDN=8(1) H
AV1
74Ø2 E33
74Ø8 E34
CL2
TCCM4 ERROR RESET(1) L
74Ø2 E23
74Ø Ø E42
7432 E28
MR5 WRP 4 L
MR5 WRP 3 L
BU2
BP2
TCCM4 CRC STRB H
BA1
BS1
TCCM4 WB CLK H
TCCM4 LRC STRB(SB) L
74Ø2 E23
74Ø8 E25
74Ø4 E3Ø
AK2
AL1
AP1
AN1
AM1
AK1
AS1
AE1
AR1
AJ1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	TAPE CONTROL (CNRZ3)			
SCALE		SHEET 3 OF 5	SIZE D	CODE CS
			DIST.	NUMBER M8934-YA-1 REV *

CNRZ4 CRC ERROR H

CNRZ4 CRC ERROR L

CNRZ3 CYCLE 2(1) H

CNRZ2 ERDS (1) H

CNRZ5 CRC P H
CNRZ5 CRC 7 H
CNRZ5 CRC 6 H
CNRZ5 CRC 5 H
CNRZ5 ED 4 H
CNRZ5 CRC 3 H
CNRZ5 CRC 2 H
CNRZ5 CRC 1 H
CNRZ5 CRC Ø H

CNRZ3 CYCLE 2+3 H

+3V

DJZ

CNRZ4 INC ERROR L

CNRZ4 TRK 4 ERR L
CNRZ4 TRK 7 ERR L
CNRZ4 TRK 6 ERR L
CNRZ4 TRK 5 ERR L
CNRZ4 TRK 3 ERR L
CNRZ4 TRK 9 ERR L
CNRZ4 TRK 1 ERR L
CNRZ4 TRK 8 ERR L
CNRZ4 TRK 2 ERR L

CNRZ3 CYCLE 2(1) L
CNRZ5 LRCS L
CNRZ2 ERDS(1) H

CNRZ5 VRC H

CNRZ3 CYCLE 3(1) H

CNRZ4 CLK VPE L

CNRZ3 ENBL CYCLE 2 H

CNRZ3 CYCLE 3(1) L

CNRZ4 LRCC MATCH H

CNRZ5 RD P H
CNRZ5 RD 7 H
CNRZ5 RD 6 H
CNRZ5 RD 5 H
CNRZ5 RD 4 H
CNRZ5 RD 3 H
CNRZ5 RD 2 H
CNRZ5 RD 1 H
CNRZ5 RD Ø H

MBIG DRV SET PLS H
MRS ILCC L

CNRZ2 ERDS(Ø) H

+3V

CNRZ5 RD P H
CNRZ5 RD Ø H
CNRZ5 RD 7 H
CNRZ5 RD 1 H
CNRZ5 RD 6 H
CNRZ5 RD 2 H
CNRZ5 RD 5 H
CNRZ5 RD 3 H

CNRZ4 CRC P H
CNRZ4 CRC 7 H
CNRZ4 CRC 6 H
CNRZ4 CRC 5 H
CNRZ4 CRC 3 H
CNRZ4 CRC 2 H
CNRZ4 CRC 1 H
CNRZ4 CRC Ø H

CNRZ3 CYCLE 2(1) L
MBI 7 REV H

CNRZ4 REV CRCC ENBL H

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TAPE CONTROL (CNRZ4)	D	DCS	M 8934-YA-1	*
SCALE —	SHEET 4 OF 5	DIST.		

TCCMG RDA P H — CS2 — 7486 E43 — MB5 WRP4 L, DBI — CNRZ2 CRCS H — 74Ø2 E33

74175 E46: TCCMG RDA 7 H — DE2; TCCMG RDA 6 H — CU2; TCCMG RDA 5 H — CT2; TCCMG RDA 4 H — CE2; TCCMG RDA 3 H — DH2; TCCMG RDA 2 H — CM2; TCCMG RDA 1 H — DF2; TCCMG RDA Ø H — CN2; TCCM7 PESB L — BDI; CNRZ2 RD PLS(1) H; CLR CLK

CNRZ5 RD LATCH P(1) L, 7(1) L, 6(1) L, 5(1) L, 4(1) H, 1(1) H, Ø(1) H — 743Ø E56 — DN2 — CNRZ5 FMK CHAR L

CNRZ5 RD LATCH 3(1) H, 2(1) H — 74Ø2 E32

74174 E41: D5 R5(1) — CNRZ5 RD LATCH 4(1) H; D4 E4(1) — CNRZ5 RD LATCH 3(1) H; D3 R3(1) — CNRZ5 RD LATCH 2(1) H; D2 R2(1) — CNRZ5 RD LATCH 1(1) H; DØ RØ(1) — CNRZ5 RD LATCH Ø(1) H; CLR CLK

CNRZ4 TRK 7 ERR L — 74Ø2 E53 — CNRZ5 RD LATCH 7(1) H — 7486 E52 — CNRZ5 RD 7 H — 74Ø5 E37 — CL1 — CNRZ5 RDB 7 L

CNRZ4 TRK 6 ERR L — 74Ø2 E53 — CNRZ5 RD LATCH 6(1) H — 7486 E52 — CNRZ5 RD 6 H — 74Ø5 E37 — CK1 — CNRZ5 RDB 6 L

CNRZ4 TRK 5 ERR L — 74Ø2 E53 — CNRZ5 RD LATCH 5(1) H — 7486 E52 — CNRZ5 RD 5 H — 74Ø5 E37 — CJ1 — CNRZ5 RDB 5 L

CNRZ4 TRK 3 ERR L — 74Ø2 E53 — CNRZ5 RD LATCH 4(1) H — 7486 E52 — CNRZ5 RD 4 H — 74Ø5 E37 — CF1 — CNRZ5 RDB 4 L

CNRZ4 TRK 9 ERR L — 74Ø2 E59 — CNRZ5 RD LATCH 3(1) H — 7486 E54 — CNRZ5 RD 3 H — 74Ø5 E37 — CV1 — CNRZ5 RDB 3 L

CNRZ4 TRK 1 ERR L — 74Ø2 E59 — CNRZ5 RD LATCH 2(1) H — 7486 E54 — CNRZ5 RD 2 H — 74Ø5 E37 — CD1 — CNRZ5 RDB 2 L

CNRZ4 TRK 8 ERR L — 74Ø2 E59 — CNRZ5 RD LATCH 1(1) H — 7486 E54 — CNRZ5 RD 1 H — 74Ø5 E36 — CP1 — CNRZ5 RDB 1 L

CNRZ4 TRK 2 ERR L — 74Ø2 E59 — CNRZ5 RD LATCH Ø(1) H — 7486 E54 — CNRZ5 RD Ø H — 74Ø5 E36 — CE1 — CNRZ5 RDB ØL

CNRZ4 TRK 4 ERR L — 74Ø2 E33 — CNRZ5 RD LATCH P(1) H — 7486 E43 — CNRZ5 RD P H — 74Ø5 E36 — CH1 — CNRZ5 RDB P L

CNRZ2 CRCS H — 74Ø4 E48 — 74ØØ E42 — 74ØØ E42 — 7486 E43 — BU1 — CNRZ5 B PAR L

CNRZ5 RD PAR ODD H — 7486 E43 — 74ØØ E42

CNRZ3 CYCLE 3(1) L — 7432 E28 — CNRZ5 PARITY ERROR L

74Ø2 E33 — 74Ø4 E48 — CNRZ5 VRC H

CNRZ2 LRCS H — 74Ø4 E48 — CNRZ5 LRCS L

MB6 PVN (1) H — DA1 — 74Ø4 E48

7474 E44 — CNRZ2 CHK CHAR L; CNRZ2 EED 5(Ø) H — 74Ø8 E34 — CK2; MBZ5 GO BUF(1) H

74181Ø E51: CNRZ5 RD LATCH 7(1) H — D4; 6(1) H — D5; 5(1) H — D7; 4(1) H — D6; 3(1) H — DØ; 2(1) H — D1; 1(1) H — D2; Ø(1) H — D3; EVEN — CNRZ5 READ PAR ODD H; ODD; ODD EVEN

CNRZ5 RD LATCH P(1) L, P(1) H

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TAPE CONTROL (CNRZ5)	D	CS	M8934-YA-1	*
SCALE —	SHEET 5 OF 5	DIST.		

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY D DESCOTEAUX	CHECKED S. Chlypenka	SECTION 1
ENG DATE 12-12-77 James Doyle	PROD DATE 12-14-77 R. Gamache	ISSUED SECTION 1
DATE 11-29-77	DATE 11-30-77	

NOTES: USED ON OPTION/MODEL TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION M8934-YA	REF DESIGNATION
	D-CS-M8934-YA-1		CIRCUIT SCHEMATIC	REF	
	D-UA-M8934-YA-Ø		UNIT ASSEMBLY	REF	
	B-DD-M8934-YA		DWG DIRECTORY	REF	
1	D-MD-5012400-0-0	5012400	ETCHED CIRCUIT BOARD	1	
2		10-00016-00	CAP 100PF 100V	1	C63
3		10-00018-00	CAP 120PF 100V	1	C62
4		10-00026-00	CAP 680PF 100V	1	C64
5		10-01610-01	CAP .01UF 100V DISC	61	C1 thru C61
6		10-05306-00	CAP 6.8UF 35V 10%	5	C65 thru C69
7		13-00229-00	RES 100 ¼W 5%	1	R3
8		13-00271-00	RES 220 ¼W 5%	1	R5
9		13-00295-00	RES 330 ¼W 5%	1	R7
10		13-00365-00	RES 1K ¼W 5%	3	R1,R2,R8
11		13-00479-00	RES 10K ¼W 5%	1	R4
12		13-01874-00	RES 5.6K ¼W 5%	1	R6
13		19-05547-00	I.C. DEC 7474	9	E5,E14,E15,E16,E27,E29,E44,E31,E40
14		19-05575-00	I.C. DEC 7400	6	E12,E19,E22,E42,E45,E47
15		19-05576-00	I.C. DEC 7410	2	E8,E18
16		19-05577-00	I.C. DEC 7420	1	E24

E.C.O. NO.

TITLE: TAPE CONTROL NRZI

ASSY NO. D-UA-M8934-YA-Ø

SHEET 1 OF 3

SIZE B | CODE PL | NUMBER M8934-YA-Ø | REV. *

INSERTION PARTS LIST DATA BASE REV A

DIGITAL EQUIPMENT CORPORATION
PARTS LIST

MADE BY / DATE | CHECKED / DATE | SECTION
ENG / DATE | PROD / DATE | ISSUED SECTION

NOTES: USED ON OPTION/MODEL TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY/VARIATION	REF DESIGNATION
17		19-05578-00	I.C. DEC 7430	1	E56
18		19-0559 -00	I.C. DEC 7401	1	E57
19		19-09004-00	I.C. DEC 7402	6	E11,E23,E32,E33,E53,E59
20		19-09686-00	I.C. DEC 7404	2	E30,E48
21		19-09930-00	I.C. DEC 7405	3	E21,E37,E36
22		19-10011-00	I.C. DEC 7486	4	E43,E52,E54,E58
23		19-10035-00	I.C. DEC 74197	1	E20
24		19-10046-00	I.C. DEC 7442	1	E55
25		19-10155-00	I.C. DEC 7408	7	E10,E17,E25,E26,E34,E49.E60
26		19-10436-00	I.C. DEC 74123	1	E39
27		19-10650-00	I.C. DEC 74161	2	E7,E50
28		19-10655-00	I.C. DEC 74157	2	E1,E2
29		19-10878-00	I.C. DEC 7427	1	E13
30		19-11521-00	I.C. DEC 7432	1	E28
31		19-13750-00	I.C. MC 8500	2	E3,E6
32		19-13751-00	I.C. MC 8501	1	E4
33		19-13749-00	I.C. MC 8502	1	E38
34		90-06732-00	EYELET	8	
35		90-08337-06	HANDLE, FLIP CHIP, MAGNETA	4	

E.C.O. NO.

DRB 125

TITLE: TAPE CONTROL NRZ1

ASSY NO.: D-UA-M8934-YA-Ø

SHEET 2 OF 3

SIZE: B | CODE: PL | NUMBER: M8934-YA-Ø | REV.: *

INSERTION PARTS LIST DATA BASE REV A

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY
DATE
CHECKED
DATE
SECTION 1
ENG
DATE
PROD
DATE
ISSUED SECTION 1

QUANTITY / VARIATION

NOTES:
USED ON OPTION / MODEL
TM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	M8934-YA											REF DESIGNATION
36		90-09185-00	INSULATED JUMPERS	3											W1,W2,W3
37		19-10651-00	I.C. 74175	1											E46
38		19-10652-00	I.C. 74174	1											E41
39		19-10724-00	I.C. 74180	1											E51
40		9105740-55	WIRE, #30 AWG, GRN	AR											
41		19-10041	I.C. 74164	1											E9

3251 DRB 125

TITLE: TAPE CONTROL NRZ1

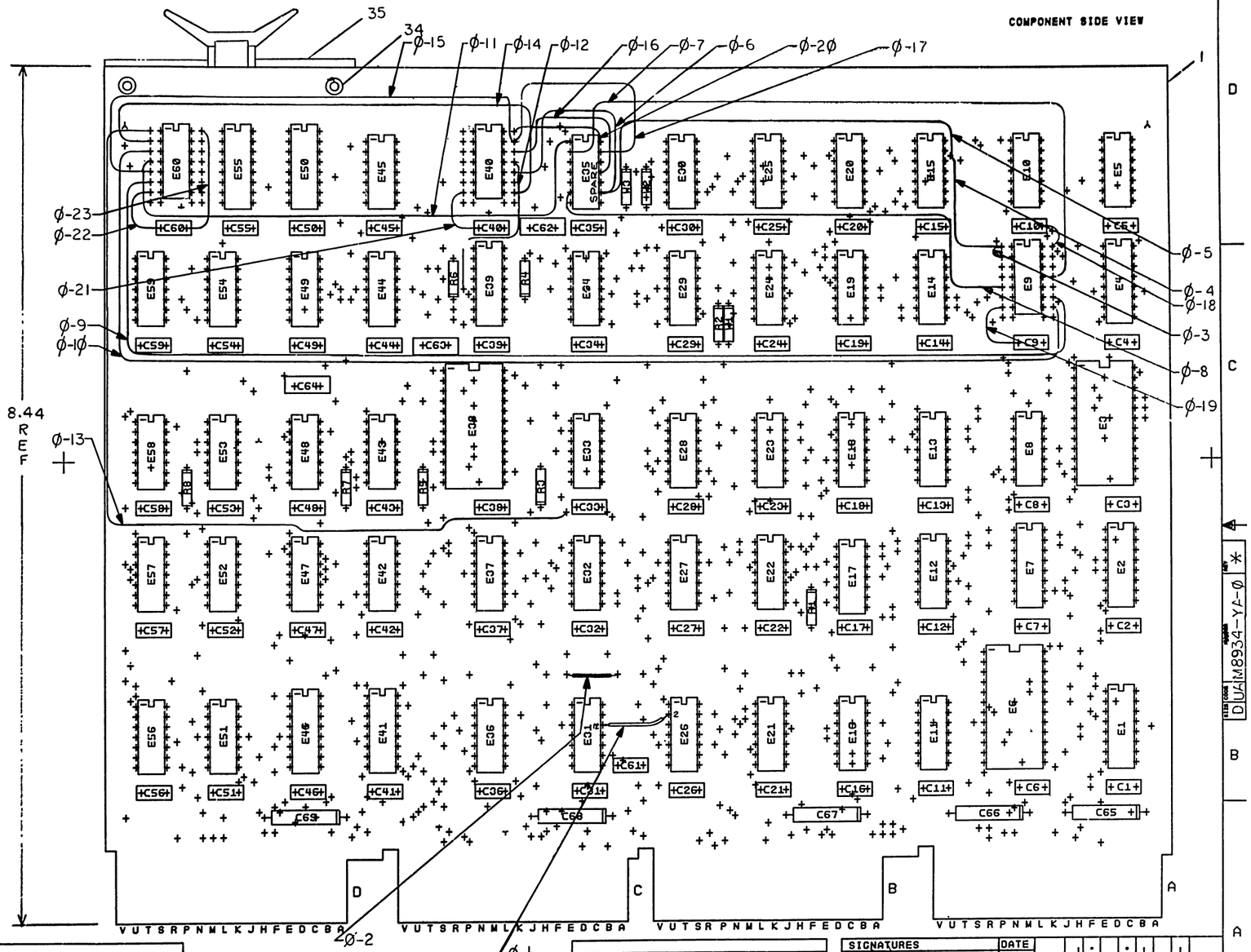
ASSY NO. D-UA-M8934-YA-1

SHEET 3 OF 3

SIZE B | CODE PL | NUMBER M8934-YA-Ø | REV. *

INSERTION PARTS LIST DATA BASE REV A

COMPONENT SIDE VIEW



NOTES.

CHG	CHANGE NO.	REV

FOR PARTS LIST REFER TO
B-PL-M8934-YA-Ø

ETCH REV.	B
P.C. DESIGN DATA BASE REV.	BL

SIGNATURES	DATE
DRN.	11-22-77
CHK'D.	12-1-77
ENG.	12-12-77
PROJ.ENG	12-12-77
PROD.	12-13-77
SCALE 2/1	
SHT. 1 OF 4	
NEXT HIGHER ASSY. B-DD-M8934-YA	

digital

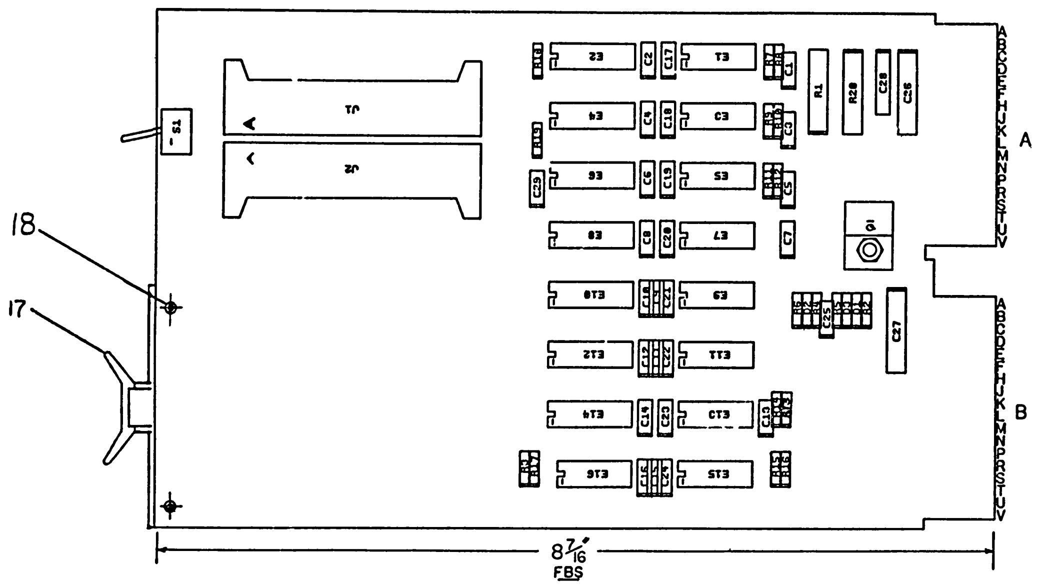
TITLE TAPE CONTROL NRZI

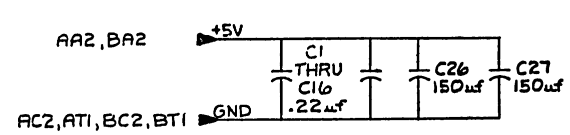
SIZE	CODE	NUMBER	REV
D	UA	M8934-YA-Ø	*

DUAM8934-YA-Ø *

1 MS#8115

NOTES:





IC TYPE	-5V	GND	+5V
DEC 75107B	13	7	14
DEC 75108B	13	7	14
DEC 75113	—	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M59Ø3-Ø-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M59Ø3-Ø-5	2
REF		MODULE ECO HISTORY	B-MH-M59Ø3-Ø-6	3
1.		ETCHED CIRCUIT BOARD	5010502	4
26	C1 THRU C25, C29	CAP. .22 uf 50V 20%	1010274	5
1	C28	CAP. 68 uf 35V 10%	1005306	6
1	D1	DIODE 1N4733A 5.1V	1109943	7
2	D2, D3	DIODE D672	1105275	8
				9
2	R4, R18	RES. 330 1/4W 5%	13 2295	10
2	R5, R19	RES. 750 1/4W 5%	1301401	11
1	R6	RES. 4.7K 1/4W 5%	1300447	12
2	J1, J2	CONN. SCOTCH FLEX 3432-1002	1209941-02	13
				14
7	E2,E4,E6,E8,E1Ø,E12,E14	I.C. DEC 75113	1911341	15
9	E1,3,5,7,9,11,13,15,16	I.C. DEC 75108B	1910725	16
1		HANDLE, FLIP CHIP, MAGENTA	9008337-6	17
2		EYELET	9006732	18
				19
				20
2	C26, C27	CAP. 150 µf 6V 20%	1005572	21
1	S1	SWITCH	1210209	22
2	R1, R20	RES, 68, 2W, 5%	1302308	23
1	R2	RES, 470, 1/4 W, 5%	1300316	24
1	Q1	TRANS 2N649Ø	1512652-Ø1	25
1		SCREW PHM 4-40 X 1/4	9008301-Ø1	26
1		NUT, KEP 4-40	9006557	27
12	R3, R7 - R17	RES, 3.3K, 1/4 W, 5%	1300439	28
4		LEFT LATCH	1209941-03	29
4		RIGHT LATCH	1209941-04	30
A/R		THERMAL COMPOUND	9008268	31

PARTS LIST

FIRST USED ON OPTION MODEL: RH11

ETCH BOARD REV: H

DEC NO.	EIA NO.
D672	IN 3653
1N4733A	NONE

SEMICONDUCTOR CONVERSION CHART

REVISIONS: K. AMUNDSEN; M5903-0-0-1 J; T. SAMBAUGH; D. POTTER; M5903-0-1 H; D. POTTER; M5903-0-0-2 F; D. POTTER; ORIGINATED D

DRN. R Counter — DATE 8/3/73
CHKD — ENG. — PROD. —

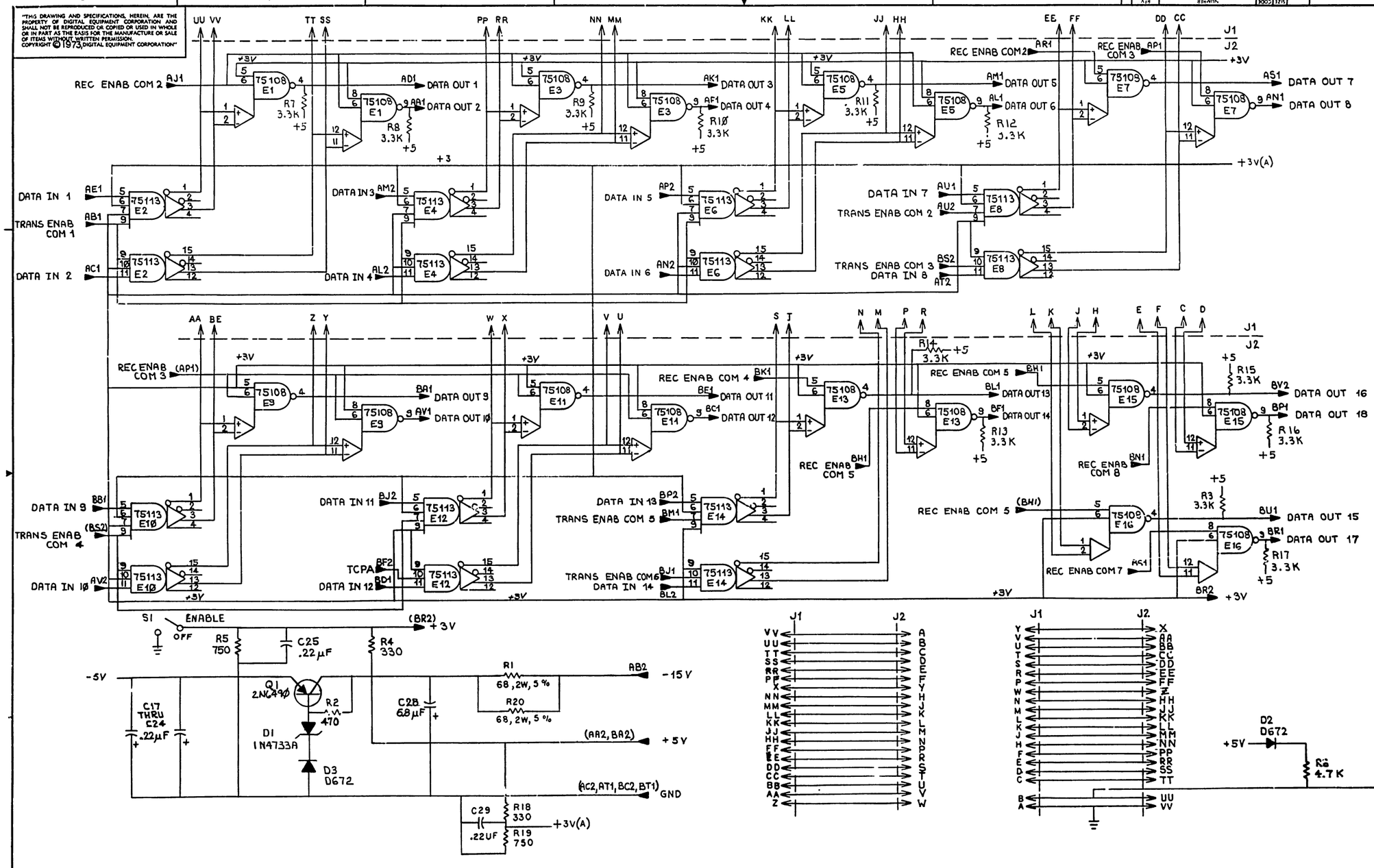
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRIVE TRANSCEIVER

SIZE D | CODE CS | NUMBER M5903-Ø-1 | REV K

SCALE NONE | SHEET 1 OF 2 | DIST.



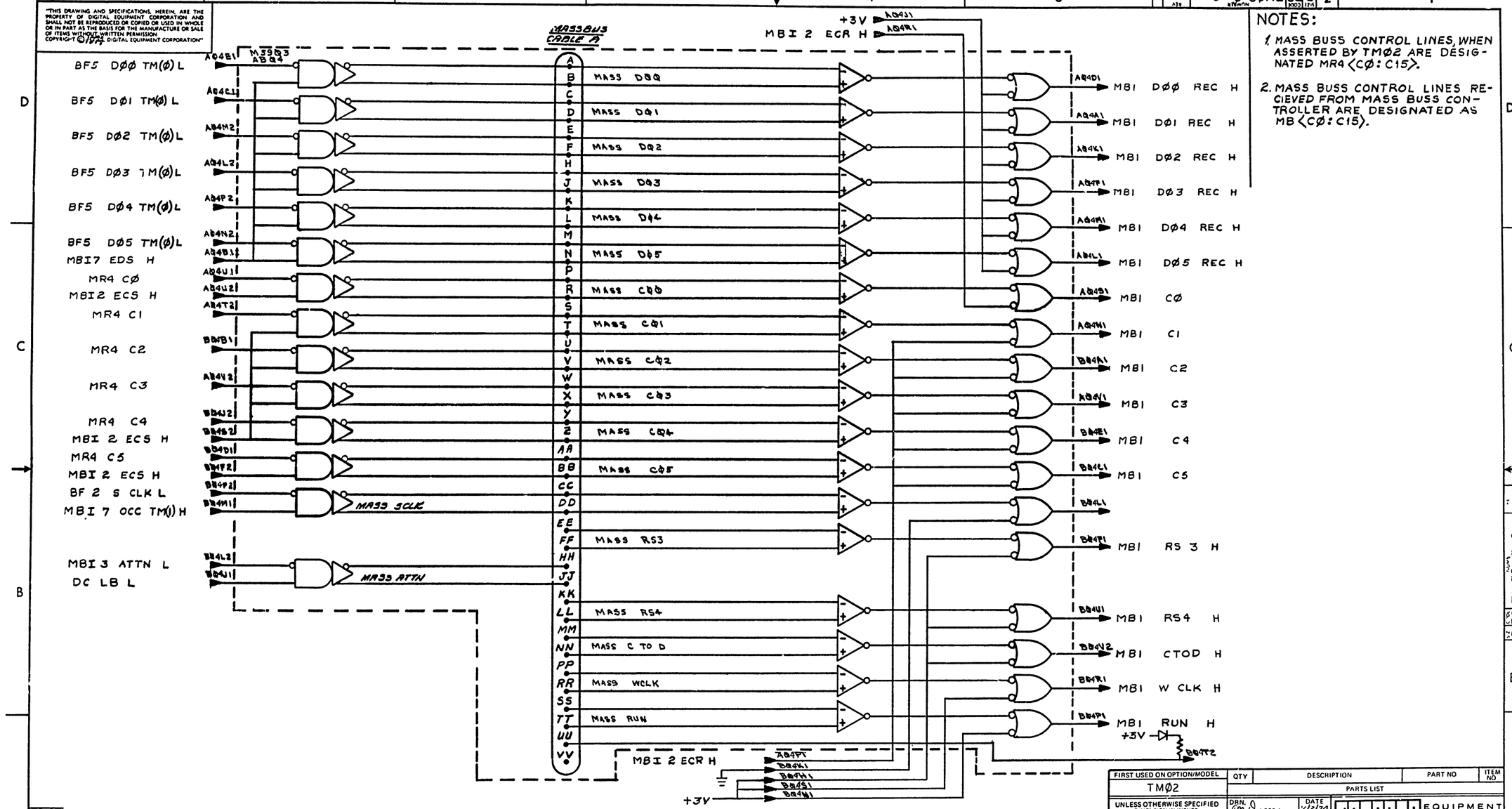
REVISIONS		
CHK	CHANGE NO.	REV

TITLE: DRIVE TRANSCEIVER	SIZE: D	CODE: CS	NUMBER: M5903-0-1	REV: K
SCALE: NONE	SHEET 2 OF 2		DIST.	

DEC FORM NO
DRD 138

NOTES:

1. MASS BUSS CONTROL LINES, WHEN ASSERTED BY TM02 ARE DESIGNATED MR4 <C0:C15>.
2. MASS BUSS CONTROL LINES RECIEVED FROM MASS BUSS CONTROLLER ARE DESIGNATED AS MB <C0:C15>.



FIRST USED ON OPTION/MODEL	TM02
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES	TOLERANCES
DECIMALS	ANGLES
xxx = 005 .xx = .02 x = .1	±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √	
MATERIAL	
FINISH	
DRN. GM Duggan	DATE 7/11/74
CHK.	DATE 7/24/74
ENG.	DATE 7-25-74
PROJ. MGR.	DATE 7-21-74
PROD. DS	DATE 8/01/74
NEXT HIGHER ASSY	B-DD-TM02-0
SCALE	
SHEET 1 OF 4	
TITLE	MASSBUSS TRANSCEIVER (MBI)
SIZE D	CODE BS
NUMBER	TM02-0-2
REV	

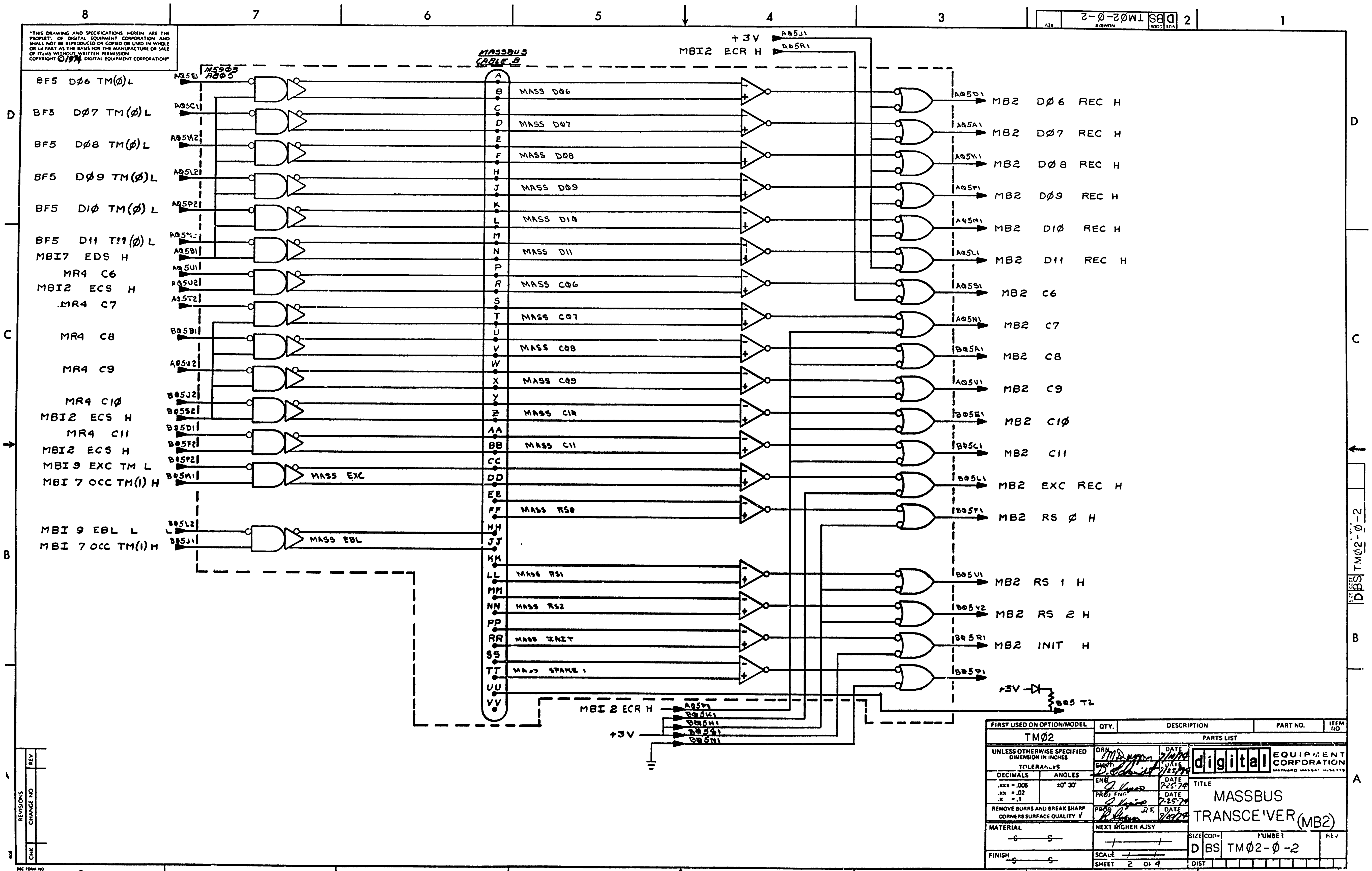
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

QTY	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 103-C



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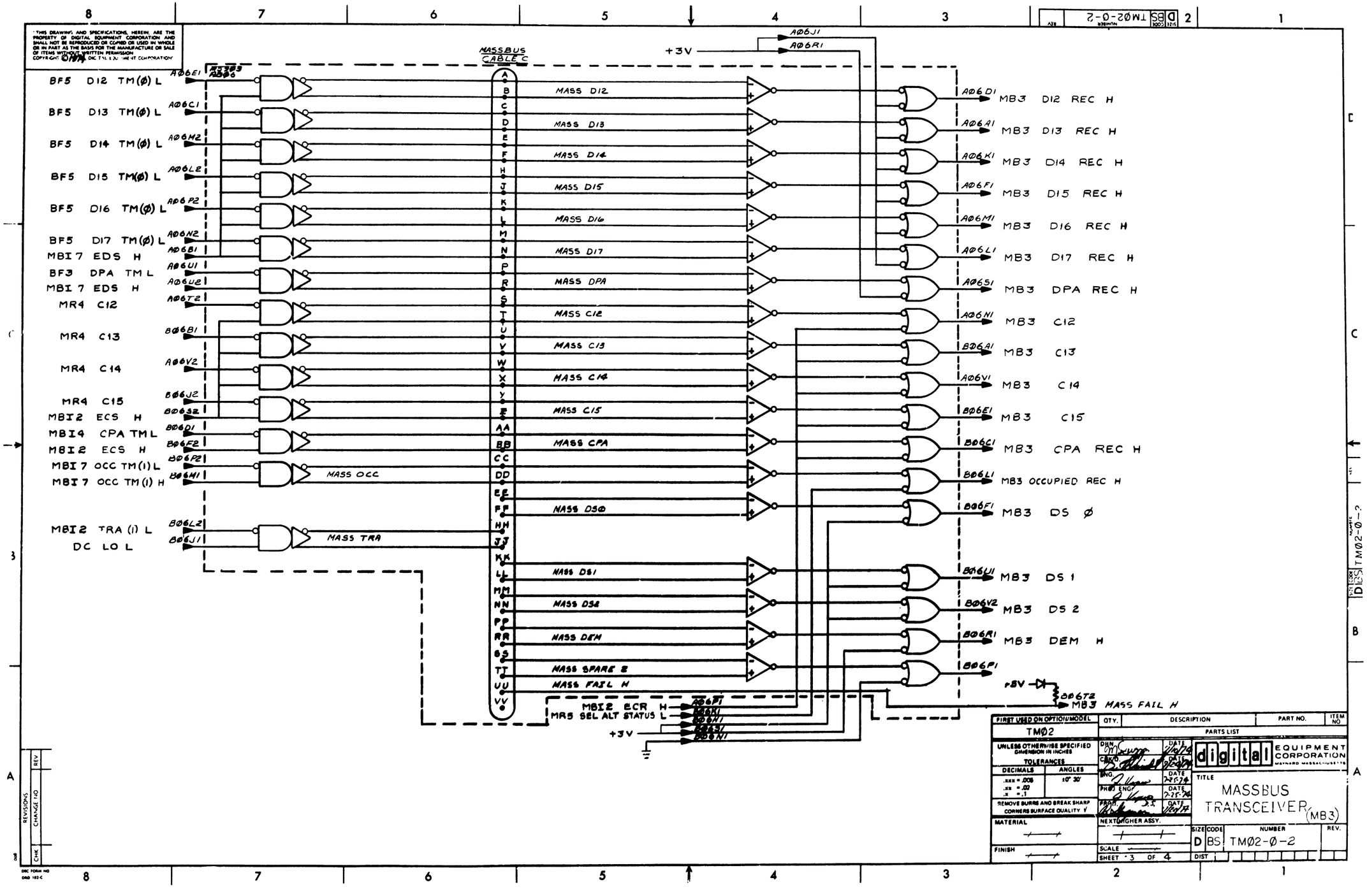
MASSBUS CABLE B
M5903 A B05
+3V
MBI2 ECR H
BF5 DØ6 TM(Ø) L
BF5 DØ7 TM(Ø) L
BF5 DØ8 TM(Ø) L
BF5 DØ9 TM(Ø) L
BF5 D1Ø TM(Ø) L
BF5 D11 TM(Ø) L
MBI7 EDS H
MR4 C6
MBI2 ECS H
MR4 C7
MR4 C8
MR4 C9
MR4 C1Ø
MBI2 ECS H
MR4 C11
MBI2 ECS H
MBI 9 EXC TM L
MBI 7 OCC TM(1) H
MBI 9 EBL L
MBI 7 OCC TM(1) H
MASS DØ6
MASS DØ7
MASS DØ8
MASS DØ9
MASS D1Ø
MASS D11
MASS CØ6
MASS CØ7
MASS CØ8
MASS CØ9
MASS C1Ø
MASS C11
MASS EXC
MASS RSØ
MASS EBL
MASS RS1
MASS RS2
MASS INIT
MASS SPARE 1
MB2 DØ6 REC H
MB2 DØ7 REC H
MB2 DØ8 REC H
MB2 DØ9 REC H
MB2 D1Ø REC H
MB2 D11 REC H
MB2 C6
MB2 C7
MB2 C8
MB2 C9
MB2 C1Ø
MB2 C11
MB2 EXC REC H
MB2 RS Ø H
MB2 RS 1 H
MB2 RS 2 H
MB2 INIT H
+3V
B05 T2
MBI 2 ECR H
+3V
FIRST USED ON OPTION/MODEL
TMØ2
QTY. DESCRIPTION PART NO. ITEM NO
PARTS LIST
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS .xxx = .005 .xx = .02 .x = .1
ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √
MATERIAL
FINISH
DRN
CHKD
ENG
PROJ ENG
PROD
DATE
7-25-74
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE
MASSBUS TRANSCEIVER (MB2)
NEXT HIGHER ASSY
SCALE
SHEET 2 OF 4
SIZE D
CODE BS
NUMBER TMØ2-Ø-2
REV
DIST
REVISIONS
REV
CHANGE NO
CHK
D BS TMØ2-Ø-2



REVISIONS		
CHANGE NO		REV.
CHK		

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TMØ2		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES: DECIMALS .XXX = .005, .XX = .02, .X = .1; ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY √
MATERIAL
FINISH

DRN DATE 1/24/74
CHK'D DATE 1/25/74
ENG. DATE 2-25-74
PROJ ENG DATE 2-25-74
PROJ DATE 1/24/74
NEXT HIGHER ASSY.
SCALE
SHEET 3 OF 4

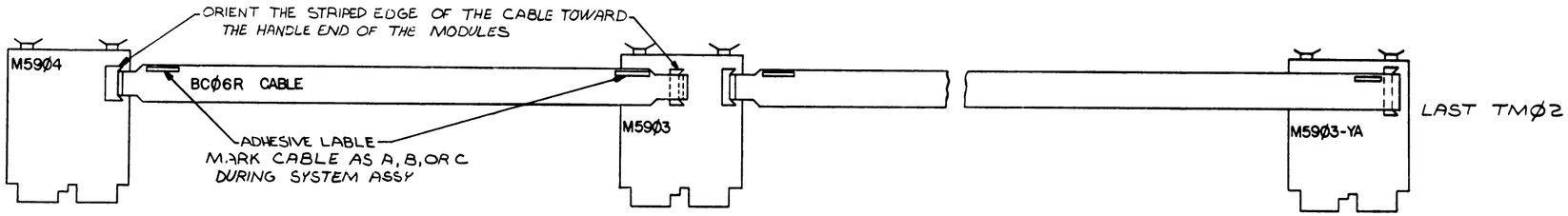
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MASSBUS TRANSCEIVER (MB3)

SIZE	CODE	NUMBER	REV.
D	BS	TMØ2-Ø-2	

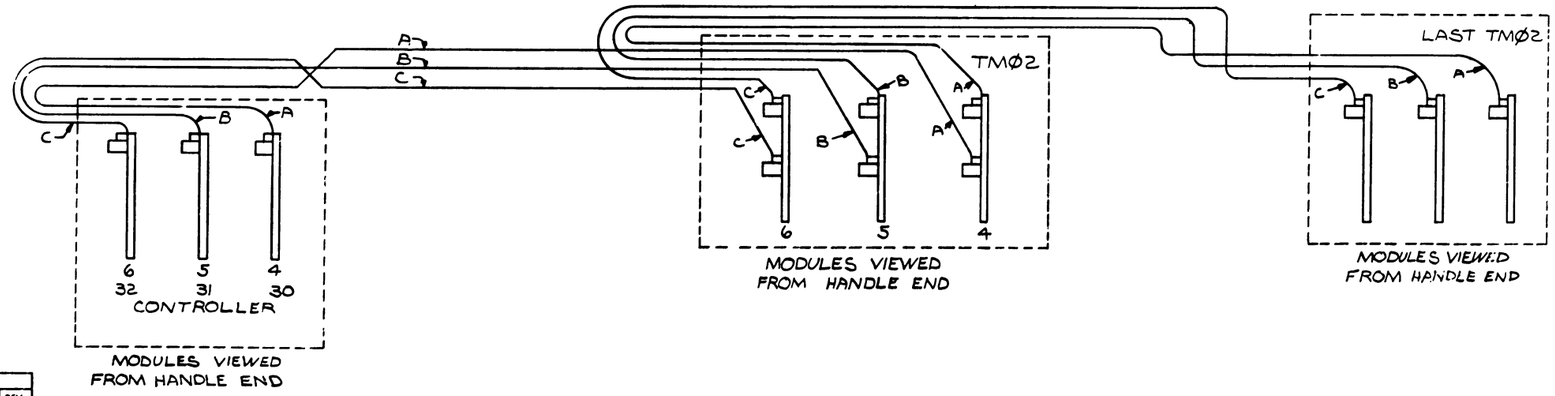
DIST

DEC FORM NO DRD 103-C



IN THE RH-11 MASSBUS CONTROLLER
SLOT 4 IS FOR CABLE A
SLOT 5 IS FOR CABLE B
SLOT 6 IS FOR CABLE C
IN THE RH 10 MASSBUS CONTROLLER
SLOT 30 IS FOR CABLE A
SLOT 31 IS FOR CABLE B
SLOT 32 IS FOR CABLE C

IN THE TM02 TAPE CONTROLLER
SLOT 4 IS FOR CABLE A
SLOT 5 IS FOR CABLE B
SLOT 6 IS FOR CABLE C



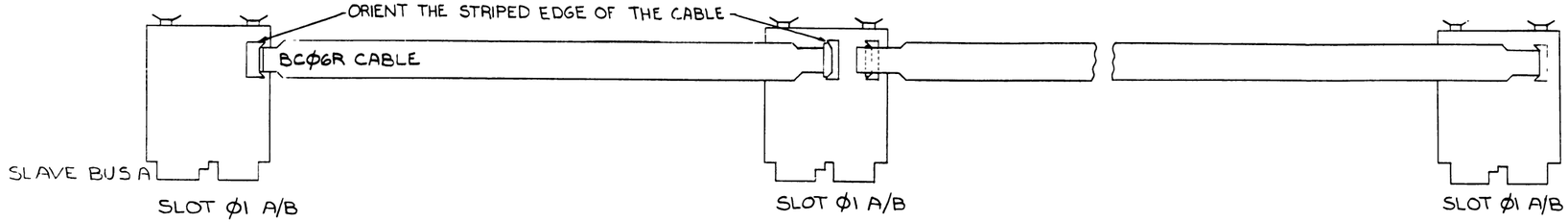
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
TM02 MASSBUS TRANSCEIVER	D	BS	TM02-0-2	
SCALE	SHEET 4 OF 4	DIST		

TMØ2
M89Ø7

TU16 MIDDLE
OF BUS
M9ØØ1

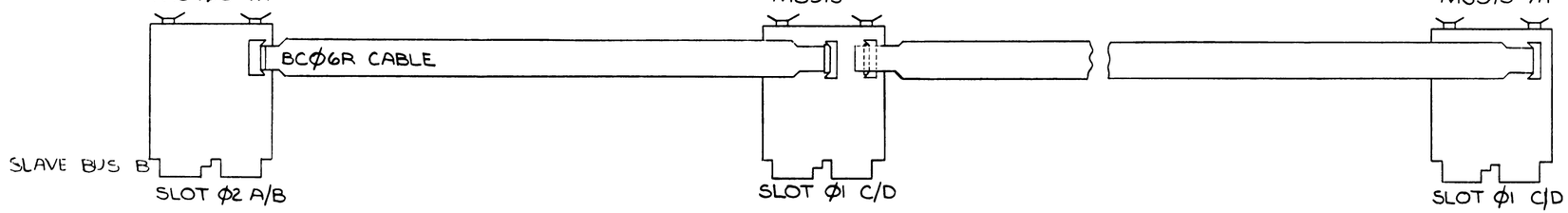
TU16 END
OF BUS
M9ØØ1-YB

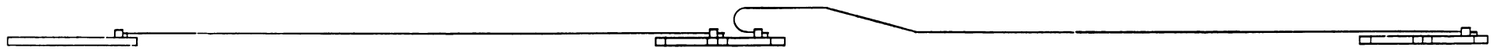


M89Ø8-YA

M8913

M8913-YA





FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU16		PARTS LIST		

DIMENSIONAL TOLERANCE
DIMENSIONS ARE [redacted] INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX ± 0.10	XXX ± .005	30' 20'
X.X ± 0.5	XX ± .02	
± 2°	X ± 1	

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP
CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. [redacted] DATE 9-27-74
CHK'D. DATE 10/04
ENG. DATE 9/27/74
PROJ. ENG. DATE 9/27/74
PROG. DATE 9-4-74
NEXT HIGHER ASSY. B-DD-TU16-Ø
SCALE
SHEET 1 OF 2

digital

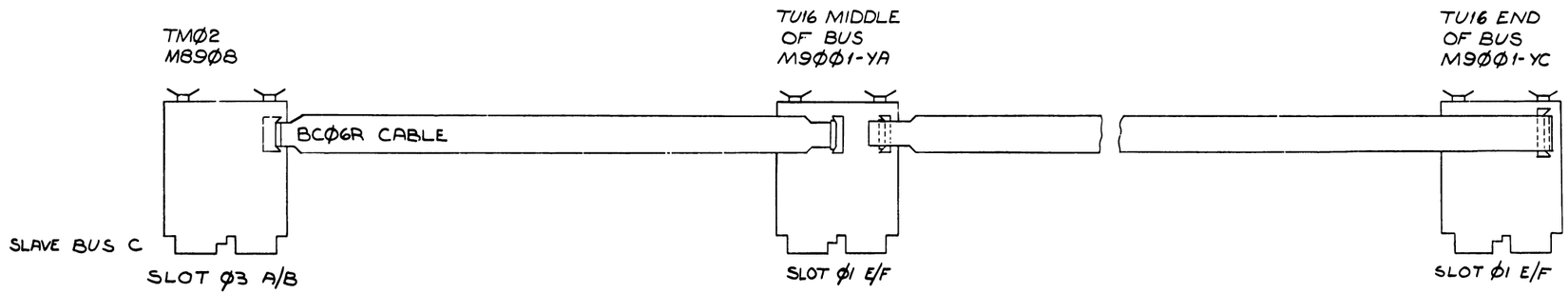
TITLE MASSBUS TRANSCIEVER (TU16)

SIZE	CODE	NUMBER	REV.
D	BS	TU16-Ø-2	

DIST.

REVISIONS	REV.
CHANGE NO.	
CHK.	

DEC FORM NO
DRD 1140 B



REVISIONS

CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MASSBUS TRANSCIEVER (TU16)	D	BS	TU16 - Ø - 2	
SCALE —/— SHEET 2 OF 2	DIST.			

LEC FORM NO 1287 137

NOTES:

1. TMØ3-CA, CB, FA, FB WILL USE M8901 YB.
   TMØ3-CE, CF, FE, FF WILL USE M8901 YC.
   TMØ3-CN,FN WILL USE M8901-YD
2. M5303 MODULES LOCATED IN THE LAST TMØ3 ON THE MASSBUS SHOULD HAVE H37Ø TERMINATORS INSTALLED.
3. M8906 IS REPLACED BY M8915 (OR M8915-YA) IN TMØ3 CA,CB,CE, & CF
   M8906 IS REPLACED BY M8915-YA IN TMØ3-CN.
4. M8934 IS REPLACED BY M8934-YA IN TMØ3-CE,CF,FE & FF.

1	TAPE CONT PHASE ENC.	M8932	11
1	MAINTENANCE REGIST	M8905-YB	10
3	MASS BUS TERMINAL	M5903	9
1	MASS BUS INTF	M8909-YA	8
1	RECEIVER TERMINATOR	M8908-YA	7
1	RECEIVER TEPMINATOR	M8908	6
1	CONN TERMINATOR	M8937	5
1	16 BIT FIDDLER	M8906	4
1	TAPE CONTROL NRZI	M8934	3
1	TAPE CONT COMMON MODE	M8933	2
3	TU16 DATA SYNC	M8901	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

REVISIONS	CHG	CHANGE NO.	REV.
	VC	TMØ3-00001	A
		TMØ3-00002	B

P. RAIKUINEN

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES					
		OVER 0 TO 0.3	OVER 0.3 TO 1.3	OVER 1.3 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.018	±.024	±.04
	PREFERRED ☐	±.012	±.018	±.026	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN. T. Baillie 7 Feb 77
CHK'D J. Hulme 20 MAY 77
ENG. [illegible] 4-7-77
PROJ. ENG. [illegible] 4-7
PROD. [illegible] 4-7 77
NEXT HIGHER ASSY.
E-UA-TMØ3-Ø-Ø
SHEET 1 OF 1

FIRST USED ON TMØ3

digital

TITLE
MODULE UTILIZATION

SIZE	CODE	NUMBER	REV.
D	MU	TMØ3-Ø-MU	B
DIST.			

USAGE

9 M8905-YA
8 * M8906
7 M8933
6 △ M5903
5 △ M5903
4 △ M5903
3 M8908
2 M8908-YA
1 M8937

USAGE

M8905-YB
M8934 □
M8932
◉ M8906
◉ M8901
◉ M8901

◉ SEE NOTE *1
△ SEE NOTE *2
* SEE NOTE *3
□ SEE NOTE *4

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TMØ3		PARTS LIST		

REVISIONS		
REV.	CHANGE NO.	CHK
A	TMØ3-MLØØ3	

DRN. T. Quillen	DATE 16 NOV 76	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D T. Colvin	DATE 20 NOV 76	
ENG. A. Vogel	DATE 1-5-77	TITLE
PROJ. ENG. J. Squier	DATE 1-5-77	WIRE LIST (TMØ3)
PROD. L. Zinger	DATE 4-6-77	
NEXT HIGHER ASSEMBLY B-DD-TMØ3-Ø		SIZE K · CODE WL · NUMBER TMØ3-Ø-WL · REV. A
SCALE —		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRB 109

REV. A · NUMBER TMØ3-Ø-WL · SIZE K · CODE WL

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
+15V		F01V1		1-01 *	P						1		1		1
+15V		F02V1		1-02 *	P						2		1		1
+15V		F03V1		1-03 *											1
+15V				1									2-0/8		1
+3V		A03P2		1-01 *							1		2-2/8		2
+3V		B01A1		1-02 *											2
+3V				1									2-2/8		2
+5V 01		A01A2		1-01 *	P						1		3-2/8		3
+5V 01		B01A2		1-02 *	P						2		3		3
+5V 01		C01A2		1-03 *	P						1		3-2/8		3
+5V 01		D01A2		1-04 *	P						2		3		3
+5V 01		E01A2		1-05 *	P						1		3-2/8		3
+5V 01		F01A2		1-06 *	P										3
+5V 01				1									15-6/8		3
+5V 02		A02A2		1-01 *	P						1		3-2/8		4
+5V 02		B02A2		1-02 *	P						2		3		4
+5V 02		C02A2		1-03 *	P						1		3-2/8		4
+5V 02		D02A2		1-04 *	P						2		3		4
+5V 02		E02A2		1-05 *	P						1		3-2/8		4
+5V 02		F02A2		1-06 *	P										4
+5V 02				1									15-6/8		4
+5V 03		A03A2		1-01 *	P						1		3-2/8		5
+5V 03		B03A2		1-02 *	P						2		3		5
+5V 03		C03A2		1-03 *	P						1		3-2/8		5
+5V 03		D03A2		1-04 *	P						2		3		5
+5V 03		E03A2		1-05 *	P						1		3-2/8		5
+5V 03		F03A2		1-06 *	P										5
+5V 03				1									15-6/8		5
+5V 04		A04A2		1-01 *	P						1		3-2/8		6
+5V 04		B04A2		1-02 *	P						2		3		6
+5V 04		C04A2		1-03 *	P						1		3-2/8		6
+5V 04		D04A2		1-04 *	P						2		3		6
+5V 04		E04A2		1-05 *	P						1		3-2/8		6
+5V 04		F04A2		1-06 *	P										6
+5V 04				1									15-6/8		6
+5V 05		A05A2		1-01 *	P						1		3-2/8		7
+5V 05		B05A2		1-02 *	P						2		3		7
+5V 05		C05A2		1-03 *	P						1		3-2/8		7
+5V 05		D05A2		1-04 *	P						2		3		7
+5V 05		E05A2		1-05 *	P						1		3-2/8		7
+5V 05		F05A2		1-06 *	P										7
+5V 05				1									15-6/8		7
+5V 06		A06A2		1-01 *	P						1		3-2/8		8
+5V 06		B06A2		1-02 *	P						2		3		8
+5V 06		C06A2		1-03 *	P						1		3-2/8		8
+5V 06		D06A2		1-04 *	P						2		3		8
+5V 06		E06A2		1-05 *	P						1		3-2/8		8
+5V 06		F06A2		1-06 *	P										8
+5V 06				1									15-6/8		8

RUN NAME	A/P PIN NAME	WRAPD ORDER PIN	03-JUN-77 BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	RUN NUMBER
24-32 H		D04A1										1-PIN RUN	19
3 ENV H		D04H1										1-PIN RUN	20
45 IPS(1) L		A01F2	1-01	*						1		11-2/8	21
45 IPS(1) L		E01J2	1-02	*									21
45 IPS(1) L			1									11-2/8	21
45 IPS(2) L		E01F1	1-01	*						1		1-3/8	22
45 IPS(2) L		E02J2	1-02	*									22
45 IPS(2) L			1									1-3/8	22
45 IPS(3) L		E02F1	1-01	*						2		1-3/8	23
45 IPS(3) L		E03J2	1-02	*						1		4-7/8	23
45 IPS(3) L		F05R2	1-03	*									23
45 IPS(3) L			1									6-2/8	23
7 CH H		A03D2	1-01	*						1		7-3/8	24
7 CH H		C03U2	1-02	*	P					2		1	24
7 CH H		C02U2	1-03	*	P					1		3	24
7 CH H		C07U2	1-04	*						1		3-4/8	24
7 CH H		C01U2	1-05	*									24
7 CH H			1									14-7/8	24
7 CH L		C05J2	1-01	*	P					2		1-4/8	25
7 CH L		C07J2	1-02	*	P							1	25
7 CH L		C08J2	1-03	*									25
7 CH L			1									2-4/8	25
7 CH TM0		B07B2	1-01	*						1		3-6/8	26
7 CH TM0		B01B1	1-02	*									26
7 CH TM0			1									3-6/8	26
7 CH TM1		A07R1	1-01	*						1		3-4/8	27
7 CH TM1		A01R1	1-02	*									27
7 CH TM1			1									3-4/8	27
7 SEC D*Y TOL TO H		F07U2	1-01	*	P					1		1-4/8	28
7 SEC D*Y TOL TO H		F09U2	1-02	*									28
7 SEC D*Y TOL TO H			1									1-4/8	28
75 IPS(1) L		A01E2	1-01	*						1		11-5/8	29
75 IPS(1) L		E01K1	1-02	*									29
75 IPS(1) L			1									11-5/8	29
75 IPS(2) L		E01K2	1-01	*						1		4-4/8	30
75 IPS(2) L		E02K1	1-02	*									30
75 IPS(2) L			1									4-4/8	30
75 IPS(3) L		E02K2	1-01	*						1		0-4/8	31
75 IPS(3) L		E03K1	1-02	*									31
75 IPS(3) L			1									0-4/8	31

RUN NAME	A/P PIN NAME	WRAPD ORDER PIN	03-JUN-77 BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	RUN NUMBER
+5V 07		A07A2	1-01	*	P					1		3-2/8	9
+5V 07		B07A2	1-02	*	P					2		3	9
+5V 07		C07A2	1-03	*	P					1		3-2/8	9
+5V 07		D07A2	1-04	*	P					2		3	9
+5V 07		E07A2	1-05	*	P					1		3-2/8	9
+5V 07		F07A2	1-06	*	P								9
+5V 07			1									15-6/8	9
+5V 08		A08A2	1-01	*	P					1		3-2/8	10
+5V 08		B08A2	1-02	*	P					2		3	10
+5V 08		C08A2	1-03	*	P					1		3-2/8	10
+5V 08		D08A2	1-04	*	P					2		3	10
+5V 08		E08A2	1-05	*	P					1		3-2/8	10
+5V 08		F08A2	1-06	*	P								10
+5V 08			1									15-6/8	10
+5V 09		A09A2	1-01	*	P					1		3-2/8	11
+5V 09		B09A2	1-02	*	P					2		3	11
+5V 09		C09A2	1-03	*	P					1		3-2/8	11
+5V 09		D09A2	1-04	*	P					2		3	11
+5V 09		E09A2	1-05	*	P					1		3-2/8	11
+5V 09		F09A2	1-06	*									11
+5V 09			1									15-6/8	11
-15V		A04B2	1-01	*	P					1		0-5/8	12
-15V		A04E2	1-02	*	P					2		1-2/8	12
-15V		A05B2	1-03	*	P					2		1	12
-15V		A06B2	1-04	*						1		4-1/8	12
-15V		B04B2	1-05	*	P					2		1	12
-15V		B05B2	1-06	*	P					2		1	12
-15V		B06B2	1-07	*									12
-15V			1									9-0/8	12
125 IPS(1) L		A01D2	1-01	*						1		11-7/8	13
125 IPS(1) L		E01L1	1-02	*									13
125 IPS(1) L			1									11-7/8	13
125 IPS(2) L		E01L2	1-01	*						1		0-4/8	14
125 IPS(2) L		E02L1	1-02	*									14
125 IPS(2) L			1									0-4/8	14
125 IPS(3) L		E02L2	1-01	*						1		0-4/8	15
125 IPS(3) L		E03L1	1-02	*									15
125 IPS(3) L			1									0-4/8	15
15 MODE-		C08N2										1-PIN RUN	16
1600 BPI L		B01R1	1-01	*						1		2-2/8	17
1600 BPI L		B03D2	1-02	*									17
1600 BPI L			1									2-2/8	17
200 BPICLK(1) H		E04H2	1-01	*	P					2		2	18
200 BPICLK(1) H		E07H2	1-02	*						1		12-7/8	18
200 BPICLK(1) H		A01U1	1-03	*									18
200 BPICLK(1) H			1									14-7/8	18

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
A EMD(1) H		C09J1		1-01 *							2		1-5/8		32
A EMD(1) H		C08S2		1-02 *							1		6-3/8		32
A EMD(1) H		E07V2		1-03 *	P						2		1-4/8		32
A EMD(1) H		E09V2		1-04 *											32
A EMD(1) H				1									9-4/8		32
AC LO L		A09H1												1-PIN RUN	33
ACCL H		C04A1		1-01 *	P						1		2		34
ACCL H		C07A1		1-02 *											34
ACCL H				1									2-0/8		34
ACCL(SB) L		A01H2		1-01 *							1		4-1/8		35
ACCL(SB) L		A07P2		1-02 *											35
ACCL(SB) L				1									4-1/8		35
ANY DD TRK H		E04R1												1-PIN RUN	36
ANY ENV H		C04K1												1-PIN RUN	37
ANY TRANS L		E0182		1-01 *							2		1		38
ANY TRANS L		E0282		1-02 *	P						1		1		38
ANY TRANS L		E0382		1-03 *	P						2		1		38
ANY TRANS L		E0482		1-04 *											38
ANY TRANS L				1									3-0/8		38
ATA H		C07C1		1-01 *	P						1		1-4/8		39
ATA H		C09C1		1-02 *											39
ATA H				1									1-4/8		39
ATTN L		B04L2		1-01 *							1		6-1/8		40
ATTN L		C09V1		1-02 *											40
ATTN L				1									6-1/8		40
BF ENBL H		A08C1		1-01 *	P						1		1		41
BF ENBL H		A09C1		1-02 *											41
BF ENBL H				1									1-0/8		41
BF FMTE H		C08A1		1-01 *	P						1		1		42
BF FMTE H		C09A1		1-02 *											42
BF FMTE H				1									1-0/8		42
BFFR A 0		D01H1		1-01 *							1		3-1/8		43
BFFR A 0		D0482		1-02 *											43
BFFR A 0				1									3-1/8		43
BFFR A 1		D03H1		1-01 *	P						1		1-3/8		44
BFFR A 1		D04M2		1-02 *											44
BFFR A 1				1									1-3/8		44
BFFR A 2		D01L2		1-01 *							1		2-1/8		45
BFFR A 2		D04R1		1-02 *											45
BFFR A 2				1									2-1/8		45

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BFFR A 3		D03M1		1-01 *	P						1		1-3/8		46
BFFR A 3		D04P2		1-02 *											46
BFFR A 3				1									1-3/8		46
BFFR A 4		D01M1		1-01 *							1		2-1/8		47
BFFR A 4		D04P1		1-02 *											47
BFFR A 4				1									2-1/8		47
BFFR A 5		D02H1		1-01 *							1		1-7/8		48
BFFR A 5		D04M1		1-02 *											48
BFFR A 5				1									1-7/8		48
BFFR A 6		D02M1		1-01 *	P						1		1-5/8		49
BFFR A 6		D04N1		1-02 *											49
BFFR A 6				1									1-5/8		49
BFFR A 7		D03L2		1-01 *	P						1		0-4/8		50
BFFR A 7		D04L1		1-02 *											50
BFFR A 7				1									0-4/8		50
BFFR A P		D02L2		1-01 *	P						1		1-3/8		51
BFFR A P		D04K2		1-02 *											51
BFFR A P				1									1-3/8		51
BIT RDY 1 L		D01R2												1-PIN RUN	52
BIT RDY 2 L		C01R2												1-PIN RUN	53
BIT RDY 3 L		E01T2												1-PIN RUN	54
BIT RDY 4 L		D02R2												1-PIN RUN	55
BIT RDY 5 L		C02R2												1-PIN RUN	56
BIT RDY 6 L		E02T2												1-PIN RUN	57
BIT RDY 7 L		D03R2												1-PIN RUN	58
BIT RDY 8 L		C03R2												1-PIN RUN	59
BIT RDY 9 L		E03T2												1-PIN RUN	60
BIT RDY H		C01M2		1-01 *							1		1		61
BIT RDY H		C02M2		1-02 *	P						2		1		61
BIT RDY H		C03M2		1-03 *	P						1		1-5/8		61
BIT RDY H		C04V1		1-04 *											61
BIT RDY H				1									3-5/8		61
BIT STRB 1 H		C03V2		1-01 *							1		8-3/8		62
BIT STRB 1 H		F06F2		1-02 *											62
BIT STRB 1 H				1									8-3/8		62
BIT STRB 2 H		E01M1		1-01 *							1		4-5/8		63
BIT STRB 2 H		F06E2		1-02 *											63
BIT STRB 2 H				1									4-5/8		63

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
BOT H		B02M2		1-01 *							1		3-3/8		64
BOT H		B07H2		1-02 *	P						2		1-4/8		64
BOT H		B09H2		1-03 *							1		6-5/8		64
BOT H		A01M2		1-04 *											64
BOT H				1									11-4/8		64
BOT L		B07H1		1-01 *	P						1		1-4/8		65
BOT L		B09H1		1-02 *											65
BOT L				1									1-4/8		65
BPAR L		B08B1		1-01 *							1		2-5/8		66
BPAR L		D05U1		1-02 *											66
BPAR L				1									2-5/8		66
BRIP(1) L		C09U2		1-01 *							1		8-3/8		67
BRIP(1) L		F06C1		1-02 *											67
BRIP(1) L				1									8-3/8		67
C00		A09E2		1-01 *	P						2		4-3/8		68
C00		A04S1		1-02 *	P						2		0-4/8		68
C00		A04U1		1-03 *							2		6-5/8		68
C00		C06R2		1-04 *											68
C00				1									11-4/8		68
C01		A09D2		1-01 *	P						2		4-1/8		69
C01		A04N1		1-02 *	P						2		1		69
C01		A04T2		1-03 *							1		5-7/8		69
C01		C06P1		1-04 *											69
C01				1									11-0/8		69
C02		B04A1		1-01 *	P						1		0-1/8		70
C02		B04B1		1-02 *	P						2		4-5/8		70
C02		B09S2		1-03 *							1		4-1/8		70
C02		C06R1		1-04 *											70
C02				1									8-7/8		70
C03		A04V2		1-01 *	P						1		0-4/8		71
C03		A04V1		1-02 *							2		4		71
C03		B09U1		1-03 *							1		3-7/8		71
C03		C06S1		1-04 *											71
C03				1									8-3/8		71
C04		B04E1		1-01 *	P						1		0-5/8		72
C04		B04J2		1-02 *	P						2		3-3/8		72
C04		B09R1		1-03 *							1		4-1/8		72
C04		C06P2		1-04 *											72
C04				1									8-1/8		72
C05		B09B2		1-01 *	P						2		3-3/8		73
C05		B04C1		1-02 *	P						2		0-1/8		73
C05		B04D1		1-03 *							2		4-7/8		73
C05		C06N1		1-04 *											73
C05				1									8-3/8		73

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
C06		A05S1		1-01 *	P						1		0-4/8		74
C06		A05U1		1-02 *							2		3-7/8		74
C06		B09D2		1-03 *							1		5-5/8		74
C06		C06M1		1-04 *											74
C06				1									10-0/8		74
C07		A05N1		1-01 *	P						1		1		75
C07		A05T2		1-02 *							1		3-2/8		75
C07		B09F2		1-03 *							2		5-1/8		75
C07		C06M2		1-04 *											75
C07				1									9-3/8		75
C08		A09N2		1-01 *							2		3-7/8		76
C08		B05B1		1-02 *	P						1		0-1/8		76
C08		B05A1		1-03 *							2		4-3/8		76
C08		C06K1		1-04 *											76
C08				1									8-3/8		76
C09		A09S1		1-01 *	P						2		2-3/8		77
C09		A05V2		1-02 *	P						2		0-4/8		77
C09		A05V1		1-03 *							2		5-1/8		77
C09		C06L1		1-04 *											77
C09				1									8-0/8		77
C10		B05E1		1-01 *	P						1		0-5/8		78
C10		B05J2		1-02 *							2		3-3/8		78
C10		C06J2		1-03 *							1		2-5/8		78
C10		B09T2		1-04 *											78
C10				1									6-5/8		78
C11		B09A1		1-01 *	P						2		2-5/8		79
C11		B05C1		1-02 *	P						2		0-1/8		79
C11		B05D1		1-03 *							2		4-3/8		79
C11		C06L2		1-04 *											79
C11				1									7-1/8		79
C12		A09K2		1-01 *							1		2-3/8		80
C12		A06N1		1-02 *	P						2		1		80
C12		A06T2		1-03 *							1		4-5/8		80
C12		C06F1		1-04 *											80
C12				1									8-0/8		80
C13		A09H2		1-01 *							2		3-1/8		81
C13		B06A1		1-02 *	P						2		0-1/8		81
C13		B06B1		1-03 *							1		3-3/8		81
C13		C06E1		1-04 *											81
C13				1									6-5/8		81
C14		A06V2		1-01 *	P						1		0-4/8		82
C14		A06V1		1-02 *							2		4-3/8		82
C14		C06H1		1-03 *							1		3-3/8		82
C14		B09V2		1-04 *											82
C14				1									8-2/8		82

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
C15		B06E1		1-01 *	P						1		0-5/8		83
C15		B06J2		1-02 *	P						2		2-2/8		83
C15		B09U2		1-03 *							1		2-5/8		83
C15		C06J1		1-04 *											83
C15				1									5-4/8		83
CER(1) H		D01D1		1-01 *							1		7-7/8		84
CER(1) H		F04L1		1-02 *											84
CER(1) H				1									7-7/8		84
CHAR CNTO H		F0181		1-01 *							1		1		85
CHAR CNTO H		F0281		1-02 *	P						2		1		85
CHAR CNTO H		F0381		1-03 *							1		10-3/8		85
CHAR CNTO H		C04C1		1-04 *											85
CHAR CNTO H				1									12-3/8		85
CHAR SHIFT H		C01M1		1-01 *							2		1		86
CHAR SHIFT H		C02M1		1-02 *	P						1		1		86
CHAR SHIFT H		C03M1		1-03 *	P						2		1		86
CHAR SHIFT H		C04M1		1-04 *											86
CHAR SHIFT H				1									3-0/8		86
CHK CHAR L		C05N2		1-01 *							1		5-1/8		87
CHK CHAR L		D08U2		1-02 *											87
CHK CHAR L				1									5-1/8		87
CLK A H		C08F1												1-PIN RUN	88
CLK B H		C08H1												1-PIN RUN	89
CLK C H		C08E1												1-PIN RUN	90
CLK D H		C08D1												1-PIN RUN	91
CLK L CK CHAR REG L		C05F2		1-01 *	P						1		1		92
CLK L CK CHAR REG L		C06F2		1-02 *											92
CLK L CK CHAR REG L				1									1-0/8		92
CLOCK H		A07M1		1-01 *							1		4		93
CLOCK H		B02E1		1-02 *											93
CLOCK H				1									4-0/8		93
CLR OPI L		F07U1		1-01 *							1		6-5/8		94
CLR OPI L		D09U1		1-02 *											94
CLR OPI L				1									6-5/8		94
CMUX 00		E06U1		1-01 *	P						1		1		95
CMUX 00		E07U1		1-02 *	P						2		1-4/8		95
CMUX 00		E09U1		1-03 *											95
CMUX 00				1									2-4/8		95
CMUX 01		E0681		1-01 *	P						1		1		96
CMUX 01		E0781		1-02 *	P						2		1-4/8		96
CMUX 01		E0981		1-03 *											96
CMUX 01				1									2-4/8		96

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
CMUX 02		E06R1		1-01 *	P						1		1		97
CMUX 02		E07R1		1-02 *	P						2		1-3/8		97
CMUX 02		E09P1		1-03 *											97
CMUX 02				1									2-3/8		97
CMUX 03		E06P1		1-01 *	P						1		1		98
CMUX 03		E07P1		1-02 *	P						2		1-5/8		98
CMUX 03		E09R1		1-03 *											98
CMUX 03				1									2-5/8		98
CMUX 04		E06N1		1-01 *							2		1		99
CMUX 04		E07N1		1-02 *	P						1		1-4/8		99
CMUX 04		E09N1		1-03 *											99
CMUX 04				1									2-4/8		99
CMUX 05		E06M1		1-01 *	P						1		1		100
CMUX 05		E07M1		1-02 *	P						2		1-4/8		100
CMUX 05		E09M1		1-03 *											100
CMUX 05				1									2-4/8		100
CMUX 06		E06L1		1-01 *	P						1		1		101
CMUX 06		E07L1		1-02 *	P						2		1-4/8		101
CMUX 06		E09L1		1-03 *											101
CMUX 06				1									2-4/8		101
CMUX 07		E06K1		1-01 *	P						1		1		102
CMUX 07		E07K1		1-02 *	P						2		1-4/8		102
CMUX 07		E09K1		1-03 *											102
CMUX 07				1									2-4/8		102
CMUX 08		E06J1		1-01 *	P						1		1		103
CMUX 08		E07J1		1-02 *	P						2		1-4/8		103
CMUX 08		E09J1		1-03 *											103
CMUX 08				1									2-4/8		103
CMUX 09		E06H1		1-01 *	P						1		1		104
CMUX 09		E07H1		1-02 *	P						2		1-4/8		104
CMUX 09		E09H1		1-03 *											104
CMUX 09				1									2-4/8		104
CMUX 10		E06F1		1-01 *	P						1		1		105
CMUX 10		E07F1		1-02 *	P						2		1-4/8		105
CMUX 10		E09F1		1-03 *											105
CMUX 10				1									2-4/8		105
CMUX 11		E06E1		1-01 *	P						1		1		106
CMUX 11		E07E1		1-02 *	P						2		1-4/8		106
CMUX 11		E09E1		1-03 *											106
CMUX 11				1									2-4/8		106
CMUX 12		E06D1		1-01 *	P						1		1		107
CMUX 12		E07D1		1-02 *	P						2		1-4/8		107
CMUX 12		E09D1		1-03 *											107
CMUX 12				1									2-4/8		107

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
CMUX 13		E06C1		1-01 *							2		1		108
CMUX 13		E07C1		1-02 *	P						1		1-4/8		108
CMUX 13		E09C1		1-03 *											108
CMUX 13				1									2-4/8		108
CMUX 14		E06B1		1-01 *	P						1		1		109
CMUX 14		E07B1		1-02 *	P						2		1-4/8		109
CMUX 14		E09B1		1-03 *											109
CMUX 14				1									2-4/8		109
CMUX 15		E06A1		1-01 *	P						1		1		110
CMUX 15		E07A1		1-02 *	P						2		1-4/8		110
CMUX 15		E09A1		1-03 *											110
CMUX 15				1									2-4/8		110
COMPER H		C07B1		1-01 *	P						1		1-4/8		111
COMPER H		C09B1		1-02 *											111
COMPER H				1									1-4/8		111
CORE DUMP		C08B1												1-PIN RUN	112
CORR/CRCE,L		F04V2		1-01 *	P						1		1		113
CORR/CRCE,L		F05V2		1-02 *	P						2		2-7/8		113
CORR/CRCE,L		F09J1		1-03 *											113
CORR/CRCE,L				1									3-7/8		113
CPA REC H		B06C1		1-01 *							1		13-1/8		114
CPA REC H		F09K1		1-02 *											114
CPA REC H				1									13-1/8		114
CPA TM L		B06D1		1-01 *	P						1		2-1/8		115
CPA TM L		B09F1		1-02 *											115
CPA TM L				1									2-1/8		115
CRC 0(1) H		C05J1		1-01 *	P						1		1-4/8		116
CRC 0(1) H		C07J1		1-02 *											116
CRC 0(1) H				1									1-4/8		116
CRC 1(1) H		C05R1		1-01 *	P						1		1-4/8		117
CRC 1(1) H		C07R1		1-02 *											117
CRC 1(1) H				1									1-4/8		117
CRC 2(1) H		C05E1		1-01 *	P						1		1-4/8		118
CRC 2(1) H		C07E1		1-02 *											118
CRC 2(1) H				1									1-4/8		118
CRC 3(1) H		C05B1		1-01 *	P						1		1-4/8		119
CRC 3(1) H		C07B1		1-02 *											119
CRC 3(1) H				1									1-4/8		119
CRC 4(1) H		C05K1		1-01 *	P						1		1-4/8		120
CRC 4(1) H		C07K1		1-02 *											120
CRC 4(1) H				1									1-4/8		120

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
CRC 5(1) H		C05M1		1-01 *	P						1		1-4/8		121
CRC 5(1) H		C07M1		1-02 *											121
CRC 5(1) H				1									1-4/8		121
CRC 6(1) H		C05N1		1-01 *	P						1		1-4/8		122
CRC 6(1) H		C07N1		1-02 *											122
CRC 6(1) H				1									1-4/8		122
CRC 7(1) H		C05P1		1-01 *	P						1		1-4/8		123
CRC 7(1) H		C07P1		1-02 *											123
CRC 7(1) H				1									1-4/8		123
CRC P(1) H		C05L1		1-01 *	P						1		1-4/8		124
CRC P(1) H		C07L1		1-02 *											124
CRC P(1) H				1									1-4/8		124
CRC STRB H		D05P2		1-01 *							1		9-1/8		125
CRC STRB H		A07P1		1-02 *											125
CRC STRB H				1									9-1/8		125
CTOD H		A09N1		1-01 *							1		6-1/8		126
CTOD H		B04V2		1-02 *											126
CTOD H				1									6-1/8		126
CYCLE 1(1) H		F05K2												1-PIN RUN	127
CYCLE 2(1) H		E05U1												1-PIN RUN	128
CYCLE 3(1) H		E05R1												1-PIN RUN	129
D BFFR I 0 L		C01F1		1-01 *							1		7-7/8		130
D BFFR I 0 L		E04P1		1-02 *											130
D BFFR I 0 L				1									7-7/8		130
D BFFR I 1 L		C03F1		1-01 *							1		7-5/8		131
D BFFR I 1 L		E04U2		1-02 *											131
D BFFR I 1 L				1									7-5/8		131
D BFFR I 2 L		E01D2		1-01 *							1		2-2/8		132
D BFFR I 2 L		E04S1		1-02 *											132
D BFFR I 2 L				1									2-2/8		132
D BFFR I 3 L		E04T2		1-01 *							1		2-3/8		133
D BFFR I 3 L		F03E2		1-02 *											133
D BFFR I 3 L				1									2-3/8		133
D BFFR I 4 L		E04F1		1-01 *							1		4-3/8		134
D BFFR I 4 L		F01E2		1-02 *											134
D BFFR I 4 L				1									4-3/8		134
D BFFR I 5 L		C02F1		1-01 *							1		6-3/8		135
D BFFR I 5 L		E04D1		1-02 *											135
D BFFR I 5 L				1									6-3/8		135

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
D BFFR I 6 L		E04C1		1-01 *							1		4-1/8		136
D BFFR I 6 L		F02E2		1-02 *											136
D BFFR I 6 L				1									4-1/8		136
D BFFR I 7 L		E03D2		1-01 *	P						1		0-4/8		137
D BFFR I 7 L		E04B1		1-02 *											137
D BFFR I 7 L				1									0-4/8		137
D BFFR I P L		EC2D2		1-01 *	P						1		1-1/8		138
D BFFR I P L		E04E1		1-02 *											138
D BFFR I P L				1									1-1/8		138
D00 REC H		A04D1		1-01 *							1		3-4/8		139
D00 REC H		A00R1		1-02 *											139
D00 REC H				1									3-4/8		139
D00 TM(0) L		A04E1		1-01 *	P						1		2-7/8		140
D00 TM(0) L		A00A1		1-02 *											140
D00 TM(0) L				1									2-7/8		140
D01 REC H		A04A1		1-01 *							1		4-1/8		141
D01 REC H		A00R2		1-02 *											141
D01 REC H				1									4-1/8		141
D01 TM(0) L		A04C1		1-01 *	P						1		2-5/8		142
D01 TM(0) L		A00B1		1-02 *											142
D01 TM(0) L				1									2-5/8		142
D02 REC H		A04K1		1-01 *	P						1		3-1/8		143
D02 REC H		A00S1		1-02 *											143
D02 REC H				1									3-1/8		143
D02 TM(0) L		AH4N2		1-01 *	P						1		3-5/8		144
D02 TM(0) L		A00B2		1-02 *											144
D02 TM(0) L				1									3-5/8		144
D03 REC H		A04F1		1-01 *							1		3-5/8		145
D03 REC H		A00S2		1-02 *											145
D03 REC H				1									3-5/8		145
D03 TM L		A04L2		1-01 *							1		3-1/8		146
D03 TM L		A00D2		1-02 *											146
D03 TM L				1									3-1/8		146
D04 REC H		A04M1		1-01 *							1		3-3/8		147
D04 REC H		A00T2		1-02 *											147
D04 REC H				1									3-3/8		147
D04 TM(0) L		A04P2		1-01 *							1		3-3/8		148
D04 TM(0) L		A00E2		1-02 *											148
D04 TM(0) L				1									3-3/8		148
D05 REC H		A04L1		1-01 *							1		3-1/8		149
D05 REC H		A00U1		1-02 *											149
D05 REC H				1									3-1/8		149

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
D05 TM(0) L		A04N2		1-01 *							1		3-1/8		150
D05 TM(0) L		A00F2		1-02 *											150
D05 TM(0) L				1									3-1/8		150
D06 REC H		A05D1		1-01 *							1		2-6/8		151
D06 REC H		A00U2		1-02 *											151
D06 REC H				1									2-6/8		151
D06 TM(0) L		A05E1		1-01 *	P						1		2-1/8		152
D06 TM(0) L		A00H1		1-02 *											152
D06 TM(0) L				1									2-1/8		152
D07 REC H		A05A1		1-01 *							1		3-4/8		153
D07 REC H		A00V1		1-02 *											153
D07 REC H				1									3-4/8		153
D07 TM(0) L		A05C1		1-01 *							1		2-5/8		154
D07 TM(0) L		A00H2		1-02 *											154
D07 TM(0) L				1									2-5/8		154
D08 REC H		A05K1		1-01 *							1		3-3/8		155
D08 REC H		A00V2		1-02 *											155
D08 REC H				1									3-3/8		155
D08 TM(0) L		A05M2		1-01 *							1		2-1/8		156
D08 TM(0) L		A00J1		1-02 *											156
D08 TM(0) L				1									2-1/8		156
D09 REC H		A05F1		1-01 *							1		3-6/8		157
D09 REC H		B00A1		1-02 *											157
D09 REC H				1									3-6/8		157
D09 TM(0) L		A05L2		1-01 *	P						1		1-5/8		158
D09 TM(0) L		A00K1		1-02 *											158
D09 TM(0) L				1									1-5/8		158
D10 REC H		A05M1		1-01 *							1		2-6/8		159
D10 REC H		B00B1		1-02 *											159
D10 REC H				1									2-6/8		159
D10 TM(0) L		A05P2		1-01 *							1		2-3/8		160
D10 TM(0) L		A00K2		1-02 *											160
D10 TM(0) L				1									2-3/8		160
D11 REC H		A05L1		1-01 *							1		2-7/8		161
D11 REC H		B00B2		1-02 *											161
D11 REC H				1									2-7/8		161
D11 TM(0) L		A05N2		1-01 *							1		1-7/8		162
D11 TM(0) L		A00L1		1-02 *											162
D11 TM(0) L				1									1-7/8		162
D12 REC H		A06D1		1-01 *							1		3-7/8		163
D12 REC H		B00C1		1-02 *											163
D12 REC H				1									3-7/8		163

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
D12 TM(0) L		A06F1		1-01 *							1		2-3/8		164
D12 TM(0) L		A08L2		1-02 *											164
D12 TM(0) L				1									2-3/8		164
D13 REC H		A06A1		1-01 *							1		4-5/8		165
D13 REC H		B08D1		1-02 *											165
D13 REC H				1									4-5/8		165
D13 TM(0) L		A06C1		1-01 *							1		1-7/8		166
D13 TM(0) L		A08M1		1-02 *											166
D13 TM(0) L				1									1-7/8		166
D14 REC H		A06K1		1-01 *							1		3-6/8		167
D14 REC H		B08D2		1-02 *											167
D14 REC H				1									3-6/8		167
D14 TM(0) L		A06M2		1-01 *		P					1		1-4/8		168
D14 TM(0) L		A08M2		1-02 *											168
D14 TM(0) L				1									1-4/8		168
D15 REC H		A06F1		1-01 *							1		3-7/8		169
D15 REC H		B08E1		1-02 *											169
D15 REC H				1									3-7/8		169
D15 TM(0) L		A06L2		1-01 *							1		1-3/8		170
D15 TM(0) L		A08N1		1-02 *											170
D15 TM(0) L				1									1-3/8		170
D16 REC H		A06M1		1-01 *							1		3-4/8		171
D16 REC H		B08E2		1-02 *											171
D16 REC H				1									3-4/8		171
D16 TM(0) L		A06P2		1-01 *		P					1		1-5/8		172
D16 TM(0) L		A08N2		1-02 *											172
D16 TM(0) L				1									1-5/8		172
D17 REC H		A06L1		1-01 *							1		3-5/8		173
D17 REC H		B08F1		1-02 *											173
D17 REC H				1									3-5/8		173
D17 TM(0) L		A06N2		1-01 *		P					1		1-3/8		174
D17 TM(0) L		A08P2		1-02 *											174
D17 TM(0) L				1									1-3/8		174
DATA H		C04B2		1-01 *		P					1		2		175
DATA H		C07B2		1-02 *											175
DATA H				1									2-0/8		175
DATA HALF(1) H		E01P2		1-01 *							1		1		176
DATA HALF(1) H		E02P2		1-02 *		P					1		1		176
DATA HALF(1) H		E03P2		1-03 *		P					2		1		176
DATA HALF(1) H		E04P2		1-04 *		P					1		2		176
DATA HALF(1) H		E07P2		1-05 *											176
DATA HALF(1) H				1									5-0/8		176

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
DATA L		C04D1												1-PIN RUN	177
DATA XFER H		A07B1		1-01 *		P					1		1-4/8		178
DATA XFER H		A09B1		1-02 *											178
DATA XFER H				1									1-4/8		178
DC LO L		A09J1		1-01 *							1		4-2/8		179
DC LO L		B04J1		1-02 *		P					2		1-4/8		179
DC LO L		B06J1		1-03 *											179
DC LO L				1									5-6/8		179
DD TRK 0(1) H		C06D1		1-01 *							2		4-4/8		180
DD TRK 0(1) H		D01E2		1-02 *							1		8-1/8		180
DD TRK 0(1) H		F04R1		1-03 *											180
DD TRK 0(1) H				1									12-5/8		180
DD TRK 0(1) L		C01V1		1-01 *							1		7-5/8		181
DD TRK 0(1) L		F04A1		1-02 *											181
DD TRK 0(1) L				1									7-5/8		181
DD TRK 1(1) H		C06C1		1-01 *							2		4-5/8		182
DD TRK 1(1) H		D03E2		1-02 *							1		7-1/8		182
DD TRK 1(1) H		F04S1		1-03 *											182
DD TRK 1(1) H				1									11-6/8		182
DD TRK 1(1) L		C03V1		1-01 *							1		7-5/8		183
DD TRK 1(1) L		F04H2		1-02 *											183
DD TRK 1(1) L				1									7-5/8		183
DD TRK 2(1) H		C06A1		1-01 *							1		9-3/8		184
DD TRK 2(1) H		E01R2		1-02 *							2		4-1/8		184
DD TRK 2(1) H		F04P1		1-03 *											184
DD TRK 2(1) H				1									13-4/8		184
DD TRK 2(1) L		E01P1		1-01 *							1		2-5/8		185
DD TRK 2(1) L		F04B1		1-02 *											185
DD TRK 2(1) L				1									2-5/8		185
DD TRK 3(1) H		C06D2		1-01 *							1		10-1/8		186
DD TRK 3(1) H		F03F2		1-02 *		P					2		1-3/8		186
DD TRK 3(1) H		F04N1		1-03 *											186
DD TRK 3(1) H				1									11-4/8		186
DD TRK 3(1) L		F03J1		1-01 *		P					1		1-1/8		187
DD TRK 3(1) L		F04K2		1-02 *											187
DD TRK 3(1) L				1									1-1/8		187
DD TRK 4(1) H		F01F2		1-01 *							1		2-5/8		188
DD TRK 4(1) H		F04R2		1-02 *		P					2		1-3/8		188
DD TRK 4(1) H		F06V1		1-03 *											188
DD TRK 4(1) H				1									4-0/8		188
DD TRK 4(1) L		F01J1		1-01 *							1		2-5/8		189
DD TRK 4(1) L		F04D2		1-02 *											189
DD TRK 4(1) L				1									2-5/8		189

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
DD TRK 5(1) H		D02E2		1-01 *							1		7-7/8		190
DD TRK 5(1) H		F04S2		1-02 *	P						2		1-5/8		190
DD TRK 5(1) H		F06T2		1-03 *											190
DD TRK 5(1) H				1									9-4/8		190
DD TRK 5(1) L		C02V1		1-01 *							1		7-5/8		191
DD TRK 5(1) L		F04E1		1-02 *											191
DD TRK 5(1) L				1									7-5/8		191
DD TRK 6(1) H		F02F2		1-01 *							2		1-6/8		192
DD TRK 6(1) H		F04N2		1-02 *	P						1		1-5/8		192
DD TRK 6(1) H		F06S2		1-03 *											192
DD TRK 6(1) H				1									3-3/8		192
DD TRK 6(1) L		F02J1		1-01 *	P						1		1-7/8		193
DD TRK 6(1) L		F04E2		1-02 *											193
DD TRK 6(1) L				1									1-7/8		193
DD TRK 7(1) H		E03R2		1-01 *							1		3-1/8		194
DD TRK 7(1) H		F04N2		1-02 *	P						2		1-4/8		194
DD TRK 7(1) H		F06U1		1-03 *											194
DD TRK 7(1) H				1									4-5/8		194
DD TRK 7(1) L		E03P1		1-01 *							1		3-1/8		195
DD TRK 7(1) L		F04F2		1-02 *											195
DD TRK 7(1) L				1									3-1/8		195
DD TRK P H		C06U1		1-01 *							1		6-7/8		196
DD TRK P H		E02R2		1-02 *							2		3-7/8		196
DD TRK P H		F04P2		1-03 *											196
DD TRK P H				1									10-6/8		196
DD TRK P L		E02P1		1-01 *							1		3-3/8		197
DD TRK P L		F04H1		1-02 *											197
DD TRK P L				1									3-3/8		197
DEM H		A09U2		1-01 *							1		4-1/8		198
DEM H		B06R1		1-02 *											198
DEM H				1									4-1/8		198
DEN Ø (SB) H		D06L2												1-PIN RUN	199
DEN 1(Ø) H		D06T2												1-PIN RUN	200
DEN 2 L		B01P1		1-01 *							1		4-5/8		201
DEN 2 L		C06U2		1-02 *											201
DEN 2 L				1									4-5/8		201
DEN 2(1) H		C06V2		1-01 *	P						1		1		202
DEN 2(1) H		C07V2		1-02 *							1		2-3/8		202
DEN 2(1) H		D09H2		1-03 *											202
DEN 2(1) H				1									3-3/8		202
DPA REC H		A06S1		1-01 *							1		2-1/8		203
DPA REC H		A08E1		1-02 *											203
DPA REC H				1									2-1/8		203

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
DPA TM L		A06U1		1-01 *							1		2-6/8		204
DPA TM L		A08D1		1-02 *							2		12-1/8		204
DPA TM L		E08P1		1-03 *											204
DPA TM L				1									14-7/8		204
DROPPED BIT Ø H		C01E1												1-PIN RUN	205
DROPPED BIT 1 H		C03E1												1-PIN RUN	206
DROPPED BIT 2 H		C01U1												1-PIN RUN	207
DROPPED BIT 3 H		E03S1												1-PIN RUN	208
DROPPED BIT 4 H		E01S1												1-PIN RUN	209
DROPPED BIT 5 H		C02E1												1-PIN RUN	210
DROPPED BIT 6 H		E02S1												1-PIN RUN	211
DROPPED BIT 7 H		C03U1												1-PIN RUN	212
DROPPED BIT P H		C02U1												1-PIN RUN	213
DRV CLR PLS H		A09P2		1-01 *							1		5-7/8		214
DRV CLR PLS H		B01D2		1-02 *											214
DRV CLR PLS H				1									5-7/8		214
DRV SET PLS H		C04S2		1-01 *	P						1		1		215
DRV SET PLS H		C05S2		1-02 *	P						2		1-4/8		215
DRV SET PLS H		C07S2		1-03 *	P						2		1-4/8		215
DRV SET PLS H		C09S2		1-04 *							1		7-6/8		215
DRV SET PLS H		A01N1		1-05 *											215
DRV SET PLS H				1									11-6/8		215
DRV SET PLS L		C05E2		1-01 *	P						1		1-4/8		216
DRV SET PLS L		C07E2		1-02 *	P						2		1-6/8		216
DRV SET PLS L		C09P1		1-03 *							1		2-4/8		216
DRV SET PLS L		D06A1		1-04 *											216
DRV SET PLS L				1									5-6/8		216
DS ENABLE		C09B2		1-01 *							1		8-6/8		217
DS ENABLE		F09D2		1-02 *											217
DS ENABLE				1									8-6/8		217
DS0		B06F1		1-01 *	P						1		2-3/8		218
DS0		B09M1		1-02 *											218
DS0				1									2-3/8		218
DS1		B06U1		1-01 *	P						1		2-5/8		219
DS1		B09K1		1-02 *											219
DS1				1									2-5/8		219
DS2		B06V2		1-01 *							1		2-2/8		220
DS2		B09J1		1-02 *											220
DS2				1									2-2/8		220

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
DT0 H		B03H2		1-01 *							1		2-5/8		221
DT0 H		B07J2		1-02 *											221
DT0 H				1									2-5/8		221
DT1 H		A03M2		1-01 *							1		1-6/8		222
DT1 H		A01M1		1-02 *							2		3-7/8		222
DT1 H		A07N2		1-03 *											222
DT1 H				1									5-5/8		222
DT2 (SB) L		B03P1		1-01 *							1		5-1/8		223
DT2 (SB) L		A01D1		1-02 *							2		5-2/8		223
DT2 (SB) L		B07K1		1-03 *											223
DT2 (SB) L				1									10-3/8		223
EA0DTE(1) H		C06N2		1-01 *	P						1		1		224
EA0DTE(1) H		C07N2		1-02 *	P						2		1-4/8		224
EA0DTE(1) H		C09N2		1-03 *											224
EA0DTE(1) H				1									2-4/8		224
EBL L		B05L2		1-01 *	P						1		2-4/8		225
EBL L		B09L2		1-02 *											225
EBL L				1									2-4/8		225
ECR H		A04P1		1-01 *	P						1		0-1/8		226
ECR H		A04R1		1-02 *	P						2		0-5/8		226
ECR H		A05P1		1-03 *	P						2		0-1/8		226
ECR H		A05R1		1-04 *	P						2		0-5/8		226
ECR H		A06P1		1-05 *	P						2		3-1/8		226
ECR H		A09F2		1-06 *											226
ECR H				1									4-5/8		226
ECS H		A09J2		1-01 *							1		3-5/8		227
ECS H		A05U2		1-02 *	P						2		1		227
ECS H		A04U2		1-03 *							1		1-7/8		227
ECS H		B04F2		1-04 *	P						2		1		227
ECS H		B05F2		1-05 *	P						1		1		227
ECS H		B06F2		1-06 *							2		1-5/8		227
ECS H		B06S2		1-07 *	P						1		1		227
ECS H		B05S2		1-08 *	P						2		1		227
ECS H		B04S2		1-09 *											227
ECS H				1									12-1/8		227
EDS H		A05B1		1-01 *	P						1		1		228
EDS H		A04B1		1-02 *	P						2		1-4/8		228
EDS H		A06B1		1-03 *	P						2		2-3/8		228
EDS H		A06U2		1-04 *	P						2		2-5/8		228
EDS H		A09M2		1-05 *											228
EDS H				1									7-4/8		228
EIGHTY L		D04C1		1-01 *	P						1		2		229
EIGHTY L		D07C1		1-02 *											229
EIGHTY L				1									2-0/8		229

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
END H		A07S2		1-01 *							1		4-7/8		230
END H		B01E2		1-02 *											230
END H				1									4-7/8		230
ENABLE SYNC(1) H		C04E1		1-01 *							1		3-3/8		231
ENABLE SYNC(1) H		D03C1		1-02 *	P						2		1		231
ENABLE SYNC(1) H		D02C1		1-03 *							1		1		231
ENABLE SYNC(1) H		D01C1		1-04 *											231
ENABLE SYNC(1) H				1									5-3/8		231
ENBL SHDN CNTR L		D07M2		1-01 *	P						1		1-4/8		232
ENBL SHDN CNTR L		D05M2		1-02 *							1		4-3/8		232
ENBL SHDN CNTR L		E04V1		1-03 *							2		3-3/8		232
ENBL SHDN CNTR L		F09A1		1-04 *											232
ENBL SHDN CNTR L				1									9-2/8		232
END PT H		A02M2		1-01 *							1		5-1/8		233
END PT H		B07R1		1-02 *							2		2-5/8		233
END PT H		C09F1		1-03 *											233
END PT H				1									7-6/8		233
ENV 1(1) H		D01K2		1-01 *							1		2-7/8		234
ENV 1(1) H		D04B2		1-02 *											234
ENV 1(1) H				1									2-7/8		234
ENV 2(1) H		C01H2		1-01 *							1		1-6/8		235
ENV 2(1) H		C04H1		1-02 *											235
ENV 2(1) H				1									1-6/8		235
ENV 3(1) H		F01J2		1-01 *							1		1-6/8		236
ENV 3(1) H		F04J1		1-02 *											236
ENV 3(1) H				1									1-6/8		236
ENV 4(1) H		D02K2		1-01 *	P						1		1-3/8		237
ENV 4(1) H		D04E1		1-02 *											237
ENV 4(1) H				1									1-3/8		237
ENV 5(1) H		C02H2		1-01 *	P						1		1-4/8		238
ENV 5(1) H		C04H2		1-02 *											238
ENV 5(1) H				1									1-4/8		238
ENV 6(1) H		F02J2		1-01 *	P						1		1-4/8		239
ENV 6(1) H		F04J2		1-02 *											239
ENV 6(1) H				1									1-4/8		239
ENV 7(1) H		D03K2		1-01 *	P						1		1		240
ENV 7(1) H		D04H2		1-02 *											240
ENV 7(1) H				1									1-0/8		240
ENV 8(1) H		C03H2		1-01 *	P						1		0-5/8		241
ENV 8(1) H		C04J1		1-02 *											241
ENV 8(1) H				1									0-5/8		241
ENV 9(1) H		F03J2		1-01 *	P						1		0-1/8		242
ENV 9(1) H		F04K1		1-02 *											242
ENV 9(1) H				1									0-1/8		242

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
EOR L		C07H1		1-01 *	P						1		1-4/8		243
EOR L		C09H1		1-02 *							1		5-7/8		243
EOR L		D05T2		1-03 *											243
EOR L				1									7-3/8		243
ERASE L		D07U1		1-01 *	P						1		2-5/8		244
ERASE L		D09E1		1-02 *											244
ERASE L				1									2-5/8		244
ERDS(0) H		C05H2												1-PIN RUN	245
ERDS(1) H		D05M1												1-PIN RUN	246
ERROR RESET L		E04L2		1-01 *	P						1		1		247
ERROR RESET L		E05L2		1-02 *	P						2		1-4/8		247
ERROR RESET L		E07L2		1-03 *											247
ERROR RESET L				1									2-4/8		247
ES/IL TMRK L		C04D2		1-01 *	P						1		1		248
ES/IL TMRK L		C05D2		1-02 *							1		10-7/8		248
ES/IL TMRK L		F09M1		1-03 *											248
ES/IL TMRK L				1									11-7/8		248
EVEN PAR H		B09D1		1-01 *							2		3-7/8		249
EVEN PAR H		C08L2		1-02 *							1		8-3/8		249
EVEN PAR H		F06B2		1-03 *											249
EVEN PAR H				1									12-2/8		249
EXC BY CONT(1) L		C09D1												1-PIN RUN	250
EXC REC H		B05L1		1-01 *							1		2-5/8		251
EXC REC H		B09K2		1-02 *											251
EXC REC H				1									2-5/8		251
EXC TM L		B05P2		1-01 *	P						1		2-4/8		252
EXC TM L		B09P2		1-02 *											252
EXC TM L				1									2-4/8		252
F1 H		E06N2		1-01 *							1		2		253
F1 H		E09M2		1-02 *											253
F1 H				1									2-0/8		253
F2 H		E06N2		1-01 *	P						1		2		254
F2 H		E09N2		1-02 *											254
F2 H				1									2-0/8		254
F3 H		E06R2		1-01 *	P						1		2		255
F3 H		E09R2		1-02 *											255
F3 H				1									2-0/8		255
F4 H		C06S2		1-01 *							1		7-1/8		256
F4 H		E09S2		1-02 *											256
F4 H				1									7-1/8		256

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
F5 H		C06T2		1-01 *							1		7-1/8		257
F5 H		E09T2		1-02 *											257
F5 H				1									7-1/8		257
FCCLK H		A08J2		1-01 *	P						1		0-1/8		258
FCCLK H		A09K1		1-02 *											258
FCCLK H				1									0-1/8		258
FCOF(1) L		C07H2		1-01 *	P						1		1-5/8		259
FCOF(1) L		C09E2		1-02 *											259
FCOF(1) L				1									1-5/8		259
FMK PATTERN H		F04B2												1-PIN RUN	260
FMT 0(1) H		B08M2		1-01 *							1		6-1/8		261
FMT 0(1) H		D06F1		1-02 *											261
FMT 0(1) H				1									6-1/8		261
FMT 1(1) H		B08N2		1-01 *							1		7-3/8		262
FMT 1(1) H		D06U2		1-02 *											262
FMT 1(1) H				1									7-3/8		262
FMT 2(1) H		D06V2		1-01 *	P						1		1-2/8		263
FMT 2(1) H		D08S1		1-02 *											263
FMT 2(1) H				1									1-2/8		263
FMT 3(1) H		B08T2		1-01 *							1		10-3/8		264
FMT 3(1) H		F06B1		1-02 *											264
FMT 3(1) H				1									10-3/8		264
FORTY H		D04D2		1-01 *							1		2		265
FORTY H		D07D2		1-02 *											265
FORTY H				1									2-0/8		265
FWD CRCS(1) H		C05B2												1-PIN RUN	266
FWD H		A02A1		1-01 *	P						1		0-1/8		267
FWD H		A02B1		1-02 *	P						2		0-1/8		267
FWD H		A02C1		1-03 *	P						2		2-3/8		267
FWD H		A02U2		1-04 *							1		6-7/8		267
FWD H		C09R2		1-05 *	P						2		1		267
FWD H		C08R2		1-06 *	P						1		2		267
FWD H		C05R2		1-07 *											267
FWD H				1									12-4/8		267
FWD L		D05H1												1-PIN RUN	268
FWD LRCS(1) H		C05U2												1-PIN RUN	269

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
GND 01		A01C2		1-01 *	P						1		2-1/8		270
GND 01		A01T1		1-02 *	P						2		1-5/8		270
GND 01		B01C2		1-03 *	P						1		2-1/8		270
GND 01		B01T1		1-04 *	P						2		1-3/8		270
GND 01		C01C2		1-05 *	P						1		2-1/8		270
GND 01		C01T1		1-06 *	P						2		1-5/8		270
GND 01		D01C2		1-07 *	P						1		2-1/8		270
GND 01		D01T1		1-08 *	P						2		1-3/8		270
GND 01		E01C2		1-09 *	P						1		2-1/8		270
GND 01		E01T1		1-10 *	P						2		1-5/8		270
GND 01		F01C2		1-11 *	P						1		2-1/8		270
GND 01		F01T1		1-12 *											270
GND 01				1									20-3/8		270
GND 02		A02C2		1-01 *	P						1		2-1/8		271
GND 02		A02T1		1-02 *	P						2		1-5/8		271
GND 02		B02C2		1-03 *	P						1		2-1/8		271
GND 02		B02T1		1-04 *	P						2		1-3/8		271
GND 02		C02C2		1-05 *	P						1		2-1/8		271
GND 02		C02T1		1-06 *	P						2		1-5/8		271
GND 02		D02C2		1-07 *	P						1		2-1/8		271
GND 02		D02T1		1-08 *	P						2		1-3/8		271
GND 02		E02C2		1-09 *	P						1		2-1/8		271
GND 02		E02T1		1-10 *	P						2		1-5/8		271
GND 02		F02C2		1-11 *	P						1		2-1/8		271
GND 02		F02T1		1-12 *											271
GND 02				1									20-3/8		271
GND 03		A03C2		1-01 *	P						1		2-1/8		272
GND 03		A03T1		1-02 *	P						2		1-5/8		272
GND 03		B03C2		1-03 *	P						1		2-1/8		272
GND 03		B03T1		1-04 *	P						2		1-3/8		272
GND 03		C03C2		1-05 *	P						1		2-1/8		272
GND 03		C03T1		1-06 *	P						2		1-5/8		272
GND 03		D03C2		1-07 *	P						1		2-1/8		272
GND 03		D03T1		1-08 *	P						2		1-3/8		272
GND 03		E03C2		1-09 *	P						1		2-1/8		272
GND 03		E03T1		1-10 *	P						2		1-5/8		272
GND 03		F03C2		1-11 *	P						1		2-1/8		272
GND 03		F03T1		1-12 *							2		13-5/8		272
GND 03		A03V2		1-13 *											272
GND 03				1									34-0/8		272

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
GND 04		A04C2		1-01 *	P						1		2-1/8		273
GND 04		A04T1		1-02 *	P						2		1-5/8		273
GND 04		B04C2		1-03 *	P						1		1-3/8		273
GND 04		B04K1		1-04 *	P						2		1-3/8		273
GND 04		B04T1		1-05 *	P						1		1-3/8		273
GND 04		C04C2		1-06 *	P						2		2-1/8		273
GND 04		C04T1		1-07 *	P						1		1-5/8		273
GND 04		D04C2		1-08 *	P						2		2-1/8		273
GND 04		D04T1		1-09 *	P						1		1-3/8		273
GND 04		E04C2		1-10 *	P						2		2-1/8		273
GND 04		E04T1		1-11 *	P						1		1-5/8		273
GND 04		F04C2		1-12 *	P						2		2-1/8		273
GND 04		F04T1		1-13 *											273
GND 04				1									21-0/8		273
GND 05		A05C2		1-01 *	P						1		2-1/8		274
GND 05		A05T1		1-02 *	P						2		1-5/8		274
GND 05		B05C2		1-03 *	P						1		1-5/8		274
GND 05		B05N1		1-04 *	P						2		1		274
GND 05		B05T1		1-05 *	P						1		1-3/8		274
GND 05		C05C2		1-06 *	P						2		2-1/8		274
GND 05		C05T1		1-07 *	P						1		1-5/8		274
GND 05		D05C2		1-08 *	P						2		2-1/8		274
GND 05		D05T1		1-09 *	P						1		1-3/8		274
GND 05		E05C2		1-10 *	P						2		2-1/8		274
GND 05		E05T1		1-11 *	P						1		1-5/8		274
GND 05		F05C2		1-12 *	P						2		2-1/8		274
GND 05		F05T1		1-13 *											274
GND 05				1									20-7/8		274
GND 06		A06C2		1-01 *	P						1		2-1/8		275
GND 06		A06T1		1-02 *	P						2		1-5/8		275
GND 06		B06C2		1-03 *	P						1		1-5/8		275
GND 06		B06N1		1-04 *	P						2		1		275
GND 06		B06T1		1-05 *	P						1		1-3/8		275
GND 06		C06C2		1-06 *	P						2		2-1/8		275
GND 06		C06T1		1-07 *	P						1		1-5/8		275
GND 06		D06C2		1-08 *	P						2		2-1/8		275
GND 06		D06T1		1-09 *	P						1		1-3/8		275
GND 06		E06C2		1-10 *	P						2		2-1/8		275
GND 06		E06T1		1-11 *	P						1		1-5/8		275
GND 06		F06C2		1-12 *	P						2		2-1/8		275
GND 06		F06T1		1-13 *											275
GND 06				1									20-7/8		275

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
GND 07		A07C2		1-01 *	P						1		2-1/8		276
GND 07		A07T1		1-02 *							2		1-5/8		276
GND 07		B07C2		1-03 *	P						1		2-1/8		276
GND 07		B07T1		1-04 *							2		1-3/8		276
GND 07		C07C2		1-05 *	P						1		2-1/8		276
GND 07		C07T1		1-06 *							2		1-5/8		276
GND 07		D07C2		1-07 *	P						1		2-1/8		276
GND 07		D07T1		1-08 *							2		1-3/8		276
GND 07		E07C2		1-09 *	P						1		2-1/8		276
GND 07		E07T1		1-10 *							2		1-5/8		276
GND 07		F07C2		1-11 *	P						1		2-1/8		276
GND 07		F07T1		1-12 *											276
GND 07				1									20-3/8		276
GND 08		A08C2		1-01 *	P						1		2-1/8		277
GND 08		A08T1		1-02 *							2		1-5/8		277
GND 08		B08C2		1-03 *	P						1		2-1/8		277
GND 08		B08T1		1-04 *							2		1-3/8		277
GND 08		C08C2		1-05 *	P						1		2-1/8		277
GND 08		C08T1		1-06 *							2		1-5/8		277
GND 08		D08C2		1-07 *	P						1		2-1/8		277
GND 08		D08T1		1-08 *							2		1-3/8		277
GND 08		E08C2		1-09 *	P						1		2-1/8		277
GND 08		E08T1		1-10 *							2		1-5/8		277
GND 08		F08C2		1-11 *	P						1		2-1/8		277
GND 08		F08T1		1-12 *											277
GND 08				1									20-3/8		277
GND 09		A09C2		1-01 *	P						1		2-1/8		278
GND 09		A09T1		1-02 *							2		1-5/8		278
GND 09		B09C2		1-03 *	P						1		2-1/8		278
GND 09		B09T1		1-04 *							2		1-3/8		278
GND 09		C09C2		1-05 *	P						1		2-1/8		278
GND 09		C09T1		1-06 *							2		1-5/8		278
GND 09		D09C2		1-07 *	P						1		2-1/8		278
GND 09		D09T1		1-08 *							2		1-3/8		278
GND 09		E09C2		1-09 *	P						1		2-1/8		278
GND 09		E09T1		1-10 *							2		1-5/8		278
GND 09		F09C2		1-11 *	P						1		2-1/8		278
GND 09		F09T1		1-12 *											278
GND 09				1									20-3/8		278
GO BUF H		C06K2		1-01 *	P						1		1		279
GO BUF H		C07K2		1-02 *	P						2		1-4/8		279
GO BUF H		C09K2		1-03 *							2		5-3/8		279
GO BUF H		E08D2		1-04 *							1		2-5/8		279
GO BUF H		E05K2		1-05 *											279
GO BUF H				1									10-4/8		279
GO L		F07B1		1-01 *	P						1		1-4/8		280
GO L		F09B1		1-02 *											280
GO L				1									1-4/8		280

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
IDB(1) H		D04U2		1-01 *	P						1		2		281
IDB(1) H		D07U2		1-02 *							1		10-5/8		281
IDB(1) H		B01C1		1-03 *											281
IDB(1) H				1									12-5/8		281
II CC L		F05M1		1-01 *	P						1		1		282
II CC L		F06M1		1-02 *											282
II CC L				1									1-0/8		282
INC COND H		D03E1		1-01 *							1		4-1/8		283
INC COND H		E04J2		1-02 *											283
INC COND H				1									4-1/8		283
INC DATA H		D03D1		1-01 *							1		7-7/8		284
INC DATA H		F04V1		1-02 *											284
INC DATA H				1									7-7/8		284
INC ERROR L		F05J2												1-PIN RUN	285
INC FMK L		B01J2		1-01 *							1		13-3/8		286
INC FMK L		F06L1		1-02 *											286
INC FMK L				1									13-3/8		286
INC PREAMBLE L		A07A1		1-01 *							1		14-5/8		287
INC PREAMBLE L		F06F1		1-02 *											287
INC PREAMBLE L				1									14-5/8		287
INC/VPE L		F04F1		1-01 *	P						1		1		288
INC/VPE L		F05F1		1-02 *	P						2		2-3/8		288
INC/VPE L		F09H1		1-03 *											288
INC/VPE L				1									3-3/8		288
INIT H		B05R1		1-01 *	P						1		2-6/8		289
INIT H		B09R2		1-02 *											289
INIT H				1									2-6/8		289
INIT PLS(1) H		A01U2		1-01 *							1		13-3/8		290
INIT PLS(1) H		F04D1		1-02 *	P						2		1		290
INIT PLS(1) H		F05D1		1-03 *	P						1		2-4/8		290
INIT PLS(1) H		F09D1		1-04 *											290
INIT PLS(1) H				1									16-7/8		290
INIT PLS(1) L		F09C1		1-01 *							1		2-1/8		291
INIT PLS(1) L		F05D2		1-02 *											291
INIT PLS(1) L				1									2-1/8		291
INT PAR		F09N1												1-PIN RUN	292
IRD H		A03U2		1-01 *							1		9-1/8		293
IRD H		E04A1		1-02 *							2		4-7/8		293
IRD H		F06D2		1-03 *											293
IRD H				1									14-0/8		293
LCTOD(1) H		C09L1		1-01 *							1		7-7/8		294
LCTOD(1) H		E06U2		1-02 *											294
LCTOD(1) H				1									7-7/8		294

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
LRC STRB (SB) L		A01K2		1-01 *							1		3-4/8		295
LRC STRB (SB) L		A07K2		1-02 *							2		10-3/8		295
LRC STRB (SB) L		D05S1		1-03 *											295
LRC STRB (SB) L				1									13-7/8		295
MAINT 0(1) H		B01U2		1-01 *							1		13-1/8		296
MAINT 0(1) H		F06R2		1-02 *											296
MAINT 0(1) H				1									13-1/8		296
MAINT RDS L		C05T2		1-01 *							1		6-3/8		297
MAINT RDS L		E06V2		1-02 *											297
MAINT RDS L				1									6-3/8		297
MAS CLR L		D06S2		1-01 *	P						1		1		298
MAS CLR L		D07S2		1-02 *	P						2		1		298
MAS CLR L		D08S2		1-03 *	P						2		1		298
MAS CLR L		D09S2		1-04 *							1		12-1/8		298
MAS CLR L		A01V1		1-05 *											298
MAS CLR L				1									15-1/8		298
MAS FAIL H		B06T2		1-01 *							1		2-3/8		299
MAS FAIL H		B09E2		1-02 *											299
MAS FAIL H				1									2-3/8		299
MASS BUS ENBL H		A04J1		1-01 *	P						1		1		300
MASS BUS ENBL H		A05J1		1-02 *	P						2		1		300
MASS BUS ENBL H		A06J1		1-03 *							1		1-2/8		300
MASS BUS ENBL H		A06R1		1-04 *							2		2-3/8		300
MASS BUS ENBL H		B06H1		1-05 *	P						2		1-4/8		300
MASS BUS ENBL H		B04H1		1-06 *	P						2		1		300
MASS BUS ENBL H		B05H1		1-07 *	P						2		0-4/8		300
MASS BUS ENBL H		B05K1		1-08 *	P						2		0-5/8		300
MASS BUS ENBL H		B04N1		1-09 *	P						2		0-4/8		300
MASS BUS ENBL H		B04R2		1-10 *	P						2		0-1/8		300
MASS BUS ENBL H		B05S1		1-11 *	P						2		0-5/8		300
MASS BUS ENBL H		B05R2		1-12 *	P						2		0-1/8		300
MASS BUS ENBL H		B06S1		1-13 *	P						2		0-5/8		300
MASS BUS ENBL H		B06R2		1-14 *							1		2-2/8		300
MASS BUS ENBL H		B09C1		1-15 *											300
MASS BUS ENBL H				1									13-4/8		300
MID POSTMBLE(0) H		C04B1		1-01 *	P						1		1-4/8		301
MID POSTMBLE(0) H		C06B1		1-02 *											301
MID POSTMBLE(0) H				1									1-4/8		301
MM EOR CLR L		E07F2		1-01 *							1		4-1/8		302
MM EOR CLR L		F06H1		1-02 *											302
MM EOR CLR L				1									4-1/8		302
MMCLK(1) H		D06C1		1-01 *							1		4-3/8		303
MMCLK(1) H		E07K2		1-02 *											303
MMCLK(1) H				1									4-3/8		303

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
MOL H		B03V2		1-01 *							1		2-7/8		304
MOL H		B07M1		1-02 *											304
MOL H				1									2-7/8		304
MOL L		D07A1		1-01 *	P						1		1-4/8		305
MOL L		D09A1		1-02 *											305
MOL L				1									1-4/8		305
MULT DD TRK L		E04H1												1-PIN RUN	306
NO CHAR RD L		D05R2												1-PIN RUN	307
NORMAL MODE		C08C1												1-PIN RUN	308
NRZ FMK CHAR L		F05N2												1-PIN RUN	309
NSG(1) L		F07N2		1-01 *	P						1		1-3/8		310
NSG(1) L		F09L1		1-02 *											310
NSG(1) L				1									1-3/8		310
OCC TM(1) H		B04M1		1-01 *	P						1		1		311
OCC TM(1) H		B05M1		1-02 *	P						2		0-5/8		311
OCC TM(1) H		B05J1		1-03 *	P						2		0-5/8		311
OCC TM(1) H		B06M1		1-04 *							1		6-1/8		311
OCC TM(1) H		D09C1		1-05 *											311
OCC TM(1) H				1									8-3/8		311
OCC TM(1) L		B06P2		1-01 *	P						1		1-6/8		312
OCC TM(1) L		B09P1		1-02 *											312
OCC TM(1) L				1									1-6/8		312
OCCUPIED REC H		B06L1		1-01 *							1		6-1/8		313
OCCUPIED REC H		D09B1		1-02 *											313
OCCUPIED REC H				1									6-1/8		313
ODD FRM H		B08F2												1-PIN RUN	314
ONE DET 0 L		C01F2		1-01 *							1		7-3/8		315
ONE DET 0 L		E04L1		1-02 *											315
ONE DET 0 L				1									7-3/8		315
ONE DET 1 L		C03F2		1-01 *							1		6-5/8		316
ONE DET 1 L		E04M2		1-02 *											316
ONE DET 1 L				1									6-5/8		316
ONE DET 2 L		D01V2		1-01 *							1		2-2/8		317
ONE DET 2 L		E04K1		1-02 *											317
ONE DET 2 L				1									2-2/8		317
ONE DET 3 L		E04N2		1-01 *							1		3-1/8		318
ONE DET 3 L		F03E1		1-02 *											318
ONE DET 3 L				1									3-1/8		318
ONE DET 4 L		E04M1		1-01 *							1		3-2/8		319
ONE DET 4 L		F01E1		1-02 *											319
ONE DET 4 L				1									3-2/8		319

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
ONE DET 5 L		C02F2		1-01 *							1		7-1/8		320
ONE DET 5 L		E04N1		1-02 *											320
ONE DET 5 L				1									7-1/8		320
ONE DET 6 L		E04K2		1-01 *							1		3-7/8		321
ONE DET 6 L		F02E1		1-02 *											321
ONE DET 6 L				1									3-7/8		321
ONE DET 7 L		D03V2		1-01 *							1		2-7/8		322
ONE DET 7 L		E04R2		1-02 *											322
ONE DET 7 L				1									2-7/8		322
ONE DET P L		D02V2												1=PIN RUN	323
ONE READ H		D04F1												1=PIN RUN	324
ONES L		C04L2		1-01 *	P						1		2		325
ONES L		C07L2		1-02 *											325
ONES L				1									2-0/8		325
OPI(1) H		D07B2		1-01 *	P						1		1-4/8		326
OPI(1) H		D09B2		1-02 *											326
OPI(1) H				1									1-4/8		326
OVERFLOW A,B,C, L		D04V1		1-01 *							1		1-2/8		327
OVERFLOW A,B,C, L		E03A1		1-02 *	P						2		1		327
OVERFLOW A,B,C, L		E02A1		1-03 *							1		1		327
OVERFLOW A,B,C, L		E01A1		1-04 *											327
OVERFLOW A,B,C, L				1									3-2/8		327
PE WRT CLK ENBL L		D04S1		1-01 *	P						1		2		328
PE WRT CLK ENBL L		D07S1		1-02 *											328
PE WRT CLK ENBL L				1									2-0/8		328
PEF/LRC L		D04V2		1-01 *	P						1		1		329
PEF/LRC L		D05V2		1-02 *							1		5-7/8		329
PEF/LRC L		F09F1		1-03 *											329
PEF/LRC L				1									6-7/8		329
PERR AND ONE DD TRK H		D01M2		1-01 *							1		1		330
PERR AND ONE DD TRK H		D02M2		1-02 *	P						2		1		330
PERR AND ONE DD TRK H		D03M2		1-03 *	P						1		0-4/8		330
PERR AND ONE DD TRK H		D04K1		1-04 *											330
PERR AND ONE DD TRK H				1									2-4/8		330
PERR L		D04J1												1=PIN RUN	331
PES(SB) L		A03D1		1-01 *							1		5-5/8		332
PES(SB) L		B07J1		1-02 *											332
PES(SB) L				1									5-5/8		332

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
PESB H		A03B1		1-01 *							1		8-7/8		333
PESB H		D04B1		1-02 *	P						2		1-4/8		333
PESB H		D06B1		1-03 *	P						2		1		333
PESB H		D07B1		1-04 *							1		4-3/8		333
PESB H		E08L1		1-05 *	P						2		3-7/8		333
PESB H		E03B1		1-06 *	P						2		1		333
PESB H		E02B1		1-07 *							1		1		333
PESB H		E01B1		1-08 *											333
PESB H				1									21-5/8		333
PESB L		A03C1		1-01 *							1		9-1/8		334
PESB L		D04D1		1-02 *	P						2		1		334
PESB L		D05D1		1-03 *	P						1		1-4/8		334
PESB L		D07D1		1-04 *	P						2		1-4/8		334
PESB L		D09D1		1-05 *							1		0-4/8		334
PESB L		D08D2		1-06 *											334
PESB L				1									13-5/8		334
PIP H		C09V2		1-01 *							1		2-2/8		335
PIP H		D07H2		1-02 *											335
PIP H				1									2-2/8		335
POS 0(0) H		C04P2		1-01 *	P						1		2		336
POS 0(0) H		C07P2		1-02 *											336
POS 0(0) H				1									2-0/8		336
POS 0(1) H		C04M2		1-01 *	P						1		2		337
POS 0(1) H		C07M2		1-02 *											337
POS 0(1) H				1									2-0/8		337
POST DETECT A,B,C H		C01S2		1-01 *							1		1		338
POST DETECT A,B,C H		C02S2		1-02 *	P						2		1		338
POST DETECT A,B,C H		C03S2		1-03 *	P						1		0-4/8		338
POST DETECT A,B,C H		C04S1		1-04 *											338
POST DETECT A,B,C H				1									2-4/8		338
POST OR PRE H		C04N1												1=PIN RUN	339
POST OR REC N ACT L		A03A1		1-01 *							1		11-1/8		340
POST OR REC N ACT L		D04T2		1-02 *											340
POST OR REC N ACT L				1									11-1/8		340
POSTAMBLE(0) H		D04E2		1-01 *							1		2		341
POSTAMBLE(0) H		D07E2		1-02 *											341
POSTAMBLE(0) H				1									2-0/8		341
PRE 0(1) L		D04L2		1-01 *	P						1		2		342
PRE 0(1) L		D07L2		1-02 *											342
PRE 0(1) L				1									2-0/8		342
PREAMBLE(0) H		E04U1												1=PIN RUN	343
PULSE(1) H		A09L1												1=PIN RUN	344

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
PVN(1) H		F05A1		1-01 *	P						1		1		345
PVN(1) H		F06A1		1-02 *	P						2		1		345
PVN(1) H		F07A1		1-03 *							1		4-7/8		345
PVN(1) H		D08N1		1-04 *											345
PVN(1) H				1									6-7/8		345
R00 L		A09L2		1-01 *							1		11-1/8		346
R00 L		D06V1		1-02 *											346
R00 L				1									11-1/8		346
R01 L		A09A1		1-01 *							1		15-3/8		347
R01 L		F07H1		1-02 *											347
R01 L				1									15-3/8		347
R03 L		F06H2		1-01 *	P						1		2		348
R03 L		F09H2		1-02 *											348
R03 L				1									2-0/8		348
R04 L		A09M1												1-PIN RUN	349
R06 L		A09R1		1-01 *							1		13-7/8		350
R06 L		F07J1		1-02 *											350
R06 L				1									13-7/8		350
R07 L		A09D1		1-01 *							1		15-7/8		351
R07 L		F06N2		1-02 *											351
R07 L				1									15-7/8		351
R10 L		A09E1		1-01 *							1		15-3/8		352
R10 L		F07M1		1-02 *											352
R10 L				1									15-3/8		352
R11 L		A09F1		1-01 *							1		15-1/8		353
R11 L		F07K1		1-02 *	P						2		1		353
R11 L		F06K1		1-03 *											353
R11 L				1									16-1/8		353
RD 0 H		B02V2		1-01 *	P						1		3		354
RD 0 H		B07V2		1-02 *											354
RD 0 H				1									3-0/8		354
RD 1(SB) L		B02U2		1-01 *	P						1		3		355
RD 1(SB) L		B07U2		1-02 *											355
RD 1(SB) L				1									3-0/8		355
RD 2(SB) L		B02S2		1-01 *							1		3		356
RD 2(SB) L		B07S2		1-02 *											356
RD 2(SB) L				1									3-0/8		356
RD 3 H		B02R2		1-01 *							1		2-5/8		357
RD 3 H		B07P1		1-02 *											357
RD 3 H				1									2-5/8		357
RD 4 H		B02P2		1-01 *							1		3		358
RD 4 H		B07P2		1-02 *											358
RD 4 H				1									3-0/8		358

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
RD 5 H		A02H2		1-01 *	P						1		3		359
RD 5 H		A07H2		1-02 *											359
RD 5 H				1									3-0/8		359
RD 6(SB) L		A02F2		1-01 *	P						1		3		360
RD 6(SB) L		A07F2		1-02 *											360
RD 6(SB) L				1									3-0/8		360
RD 7(SB) L		A02E2		1-01 *							1		3		361
RD 7(SB) L		A07E2		1-02 *											361
RD 7(SB) L				1									3-0/8		361
RD ACTV L		D05L2												1-PIN RUN	362
RD ADDR 1(1) H		D01T2		1-01 *							1		1		363
RD ADDR 1(1) H		D02T2		1-02 *	P						2		1		363
RD ADDR 1(1) H		D03T2		1-03 *							1		6-1/8		363
RD ADDR 1(1) H		F04T2		1-04 *											363
RD ADDR 1(1) H				1									8-1/8		363
RD ADDR 2(1) H		C04E2		1-01 *							1		5-3/8		364
RD ADDR 2(1) H		D03U1		1-02 *	P						2		1		364
RD ADDR 2(1) H		D02U1		1-03 *							1		1		364
RD ADDR 2(1) H		D01U1		1-04 *											364
RD ADDR 2(1) H				1									7-3/8		364
RD ADDR 3(1) H		C04K2		1-01 *							1		4-5/8		365
RD ADDR 3(1) H		D03U2		1-02 *	P						2		1		365
RD ADDR 3(1) H		D02U2		1-03 *							1		1		365
RD ADDR 3(1) H		D01U2		1-04 *											365
RD ADDR 3(1) H				1									6-5/8		365
RD P H		A02D2		1-01 *							1		7-1/8		366
RD P H		B07V1		1-02 *											366
RD P H				1									7-1/8		366
RDA 0 H		E01H2		1-01 *							1		3-1/8		367
RDA 0 H		E05N2		1-02 *							2		1-4/8		367
RDA 0 H		E07N2		1-03 *											367
RDA 0 H				1									4-5/8		367
RDA 1 H		E03H2		1-01 *							1		4-1/8		368
RDA 1 H		F07F2		1-02 *	P						2		1-4/8		368
RDA 1 H		F05F2		1-03 *											368
RDA 1 H				1									5-5/8		368
RDA 2 H		E01N1		1-01 *							1		2-5/8		369
RDA 2 H		E05M2		1-02 *	P						2		1-4/8		369
RDA 2 H		E07M2		1-03 *											369
RDA 2 H				1									4-1/8		369
RDA 3 H		E03E2		1-01 *							1		4-3/8		370
RDA 3 H		F05H2		1-02 *	P						2		1-4/8		370
RDA 3 H		F07H2		1-03 *											370
RDA 3 H				1									5-7/8		370

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RUN NAME A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q OPT	DRAW	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
RDB 6 L	E02J1		1-01 *	P						1			1-7/8		382
RDB 6 L	E05K1		1-02 *	P						2			1-2/8		382
RDB 6 L	E06K2		1-03 *												382
			1										3-1/8		
RDB 7 L	E03H1		1-01 *	P						1			1-7/8		383
RDB 7 L	E05L1		1-02 *							2			1-2/8		383
RDB 7 L	E06L2		1-03 *												383
			1										3-1/8		
RDB P L	E02H1		1-01 *	P						1			2		384
RDB P L	E05H1		1-02 *							2			1-2/8		384
RDB P L	E06H2		1-03 *												384
			1										3-2/8		
RDB 0 H	B08H2		1-01 *							1			7-5/8		385
RDB 0 H	D06R1		1-02 *												385
			1										7-5/8		
RDB 0 H	B08H1		1-01 *							1			7-3/8		386
RDB 1 H	D06P1		1-02 *												386
			1										7-3/8		
RDC 2 H	B08J1		1-01 *							1			7-1/8		387
RDC 2 H	D06N1		1-02 *												387
			1										7-1/8		
RDC 3 H	B08J2		1-01 *							1			7-3/8		388
RDC 3 H	D06M1		1-02 *												388
			1										7-3/8		
RDC 4 H	D06L1		1-01 *							1			1-4/8		389
RDC 4 H	D08L1		1-02 *												389
			1										1-4/8		
RDC 5 H	D06K1		1-01 *							1			1-4/8		390
RDC 5 H	D08K1		1-02 *												390
			1										1-4/8		
RDC 6 H	D06J1		1-01 *	P						1			1-4/8		391
RDC 6 H	D08J1		1-02 *												391
			1										1-4/8		
RDC 7 H	D06H1		1-01 *							1			1-4/8		392
RDC 7 H	D08H1		1-02 *												392
			1										1-4/8		
RDC P H	C06E2		1-01 *							1			1-7/8		393
RDC P H	C08K2		1-02 *												393
			1										1-7/8		
RDS H	D04U1		1-01 *	P						1			2-4/8		394
RDS H	D08U1		1-02 *							1			1-4/8		394
RDS H	D06U1		1-03 *							2			7-5/8		394
RDS H	B01V2		1-04 *												394
			1										11-5/8		394

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RUN NAME A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q OPT	DRAW	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
RDB 1 L	E03M2		1-01 *	P						1			1-3/8		377
RDB 1 L	E05P1		1-02 *	P						2			1-2/8		377
RDB 1 L	E06P2		1-03 *												377
			1										2-5/8		
RDB 2 L	E01H1		1-01 *							1			2-7/8		378
RDB 2 L	E05D1		1-02 *	P						2			1-2/8		378
RDB 2 L	E06D2		1-03 *												378
			1										4-1/8		
RDB 3 L	E03J1		1-01 *	P						2			2-1/8		379
RDB 3 L	E05V1		1-02 *	P						2			1		379
RDB 3 L	E06V1		1-03 *												379
			1										3-1/8		
RDB 4 L	E01J1		1-01 *							1			2-5/8		380
RDB 4 L	E05F1		1-02 *	P						2			1-2/8		380
RDB 4 L	E06F2		1-03 *												380
			1										3-7/8		
RDB 5 L	E02M2		1-01 *	P						1			2-1/8		381
RDB 5 L	E05J1		1-02 *	P						2			1-2/8		381
RDB 5 L	E06J2		1-03 *												381
			1										3-3/8		
RDA 4 H	E01E2		1-01 *							1			3-5/8		371
RDA 4 H	E05R2		1-02 *							2			1-4/8		371
RDA 4 H	E07R2		1-03 *												371
			1										5-1/8		
RDA 5 H	E02H2		1-01 *							1			2-6/8		372
RDA 5 H	E05I2		1-02 *	P						2			1-4/8		372
RDA 5 H	E07I2		1-03 *												372
			1										4-2/8		
RDA 6 H	E02E2		1-01 *							1			2-5/8		373
RDA 6 H	E05U2		1-02 *	P						2			1-4/8		373
RDA 6 H	E07U2		1-03 *												373
			1										4-1/8		
RDA 7 H	E03N1		1-01 *							1			3-3/8		374
RDA 7 H	F07E2		1-02 *	P						2			1-4/8		374
RDA 7 H	F05E2		1-03 *												374
			1										4-7/8		
RDA P H	E02N1		1-01 *	P						1			2-3/8		375
RDA P H	E05S2		1-02 *	P						2			1-4/8		375
RDA P H	E07S2		1-03 *												375
			1										3-7/8		
RDB 0 L	E01M2		1-01 *							1			2-7/8		376
RDB 0 L	E05E1		1-02 *	P						2			1-2/8		376
RDB 0 L	E06E2		1-03 *												376
			1										4-1/8		

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
RDS L		B01N1		1-01 *							2		10-5/8		395
RDS L		E04V2		1-02 *	P						1		1		395
RDS L		E05V2		1-03 *	P										395
RDS L				1									11-5/8		395
READING H		D01J2		1-01 *							1		1		396
READING H		D02J2		1-02 *	P						2		1		396
READING H		D03J2		1-03 *							1		1		396
READING H		D04J2		1-04 *	P						2		1		396
READING H		D05J2		1-05 *							1		7-5/8		396
READING H		B01K2		1-06 *							2		8-5/8		396
READING H		D07J2		1-07 *											396
READING H				1									20-2/8		396
READING L		D05K2		1-01 *	P						2		1-4/8		397
READING L		D07K2		1-02 *	P						2		1		397
READING L		D08K2		1-03 *											397
READING L				1									2-4/8		397
REC (SB) L		B01R2		1-01 *							1		3-7/8		398
REC (SB) L		B07K2		1-02 *											398
REC (SB) L				1									3-7/8		398
RECORD ACTIVE H		C01N1		1-01 *							2		1		399
RECORD ACTIVE H		C02N1		1-02 *	P						1		1		399
RECORD ACTIVE H		C03N1		1-03 *	P						2		1		399
RECORD ACTIVE H		C04L1		1-04 *							1		4-5/8		399
RECORD ACTIVE H		D01K1		1-05 *							2		1		399
RECORD ACTIVE H		D02K1		1-06 *							1		1		399
RECORD ACTIVE H		D03K1		1-07 *											399
RECORD ACTIVE H				1									9-5/8		399
RECORD ACTIVE L		C04P1		1-01 *							1		3-3/8		400
RECORD ACTIVE L		D03P2		1-02 *	P						2		1		400
RECORD ACTIVE L		D02P2		1-03 *							1		1		400
RECORD ACTIVE L		D01P2		1-04 *											400
RECORD ACTIVE L				1									5-3/8		400
RECORD H		E07V1		1-01 *	P						1		1-4/8		401
RECORD H		E09V1		1-02 *											401
RECORD H				1									1-4/8		401
REG WRT L		C09M2		1-01 *							1		9-3/8		402
REG WRT L		F06J2		1-02 *											402
REG WRT L				1									9-3/8		402
REV CRCS(1) H		C05V2												1-PIN RUN	403
REV H		A02V2		1-01 *							1		5-1/8		404
REV H		B09S1		1-02 *							2		8-3/8		404
REV H		E05D2		1-03 *											404
REV H				1									13-4/8		404

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
REV L		E01F2		1-01 *							2		1		405
REV L		E02F2		1-02 *	P						1		1		405
REV L		E03F2		1-03 *	P						2		1-4/8		405
REV L		E05F2		1-04 *							1		2-4/8		405
REV L		E09F2		1-05 *											405
REV L				1									6-0/8		405
REV LRCS H		D05E2												1-PIN RUN	406
REV LRCS L		D05F2												1-PIN RUN	407
RG 0500		D09P2		1-01 *							1		2-7/8		408
RG 0500		E08H1		1-02 *											408
RG 0500				1									2-7/8		408
RG 0501		F09V2		1-01 *	P						1		1-6/8		409
RG 0501		F08L1		1-02 *											409
RG 0501				1									1-6/8		409
RG 0502		F09V1		1-01 *	P						1		1-3/8		410
RG 0502		F08N1		1-02 *											410
RG 0502				1									1-3/8		410
RG 0503		F09U1		1-01 *	P						1		1		411
RG 0503		F08S1		1-02 *											411
RG 0503				1									1-0/8		411
RS 0 H		A09B2		1-01 *							1		5-4/8		412
RS 0 H		B05F1		1-02 *											412
RS 0 H				1									5-4/8		412
RS 1 H		A09U1		1-01 *							1		4-5/8		413
RS 1 H		B05U1		1-02 *											413
RS 1 H				1									4-5/8		413
RS 2 H		A09T2		1-01 *							1		5-2/8		414
RS 2 H		B05V2		1-02 *											414
RS 2 H				1									5-2/8		414
RS 3 H		A09S2		1-01 *							1		4-5/8		415
RS 3 H		B04F1		1-02 *											415
RS 3 H				1									4-5/8		415
RS 4 H		A09V2		1-01 *							1		4-3/8		416
RS 4 H		B04U1		1-02 *											416
RS 4 H				1									4-3/8		416
RS SHDN CNTR L		E04B2		1-01 *	P						1		1		417
RS SHDN CNTR L		E05B2		1-02 *	P						2		1-4/8		417
RS SHDN CNTR L		E07B2		1-03 *											417
RS SHDN CNTR L				1									2-4/8		417
RSDO H		D05N2		1-01 *							1		6-7/8		418
RSDO H		F07S2		1-02 *											418
RSDO H				1									6-7/8		418

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
RSDO(SB) L		A02K2		1-01 *							1		2-7/8		419
RSDO(SB) L		A07L1		1-02 *											419
RSDO(SB) L				1									2-7/8		419
RUN H		B04P1		1-01 *	P						1		3-1/8		420
RUN H		B09N1		1-02 *											420
RUN H				1									3-1/8		420
RWND (SB) L		A02P2		1-01 *							1		4-5/8		421
RWND (SB) L		B07D2		1-02 *											421
RWND (SB) L				1									4-5/8		421
RWND L		E07J2		1-01 *	P						1		1-4/8		422
RWND L		E09J2		1-02 *											422
RWND L				1									1-4/8		422
RWS H		B03M2		1-01 *	P						1		2-7/8		423
RWS H		B07R2		1-02 *											423
RWS H				1									2-7/8		423
S CLK L		B04P2		1-01 *							1		7-3/8		424
S CLK L		D08L2		1-02 *											424
S CLK L				1									7-3/8		424
SAC L		A01L2		1-01 *							1		14-5/8		425
SAC L		F05B2		1-02 *							2		8-1/8		425
SAC L		C06H2		1-03 *	P						2		1-7/8		425
SAC L		C09E1		1-04 *											425
SAC L				1									24-5/8		425
SDWN H		A03S2		1-01 *							1		2-7/8		426
SDWN H		A07M2		1-02 *											426
SDWN H				1									2-7/8		426
SDWN L		C09R1		1-01 *							1		7-7/8		427
SDWN L		F07D2		1-02 *											427
SDWN L				1									7-7/8		427
SELALT STATUS L		B06K1		1-01 *							1		10-7/8		428
SELALT STATUS L		F06J1		1-02 *											428
SELALT STATUS L				1									10-7/8		428
SET BF PAR F/F L		D09M2												1=PIN RUN	429
SET CORR SK 1 L		C04T2		1-01 *							1		2-5/8		430
SET CORR SK 1 L		D01F2		1-02 *											430
SET CORR SK 1 L				1									2-5/8		430
SET CORR SK 2 L		C01B2		1-01 *							1		3-1/8		431
SET CORR SK 2 L		C04U2		1-02 *											431
SET CORR SK 2 L				1									3-1/8		431
SET CORR SK 3 L		C04V2		1-01 *							1		2-1/8		432
SET CORR SK 3 L		D02F2		1-02 *											432
SET CORR SK 3 L				1									2-1/8		432

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
SET CORR SK 4 L		C02B2		1-01 *	P						1		2-5/8		433
SET CORR SK 4 L		C04R2		1-02 *											433
SET CORR SK 4 L				1									2-5/8		433
SET CORR SK 5 L		C04R1		1-01 *							1		2-3/8		434
SET CORR SK 5 L		D03F2		1-02 *											434
SET CORR SK 5 L				1									2-3/8		434
SET CORR SK 6 L		C03B2		1-01 *	P						1		2-3/8		435
SET CORR SK 6 L		C04U1		1-02 *											435
SET CORR SK 6 L				1									2-3/8		435
SET D PAR(1) H		A08F1		1-01 *							1		14-7/8		436
SET D PAR(1) H		F09P1		1-02 *											436
SET D PAR(1) H				1									14-7/8		436
SET DTE L		D08F1		1-01 *	P						1		1		437
SET DTE L		D09F1		1-02 *											437
SET DTE L				1									1-0/8		437
SET NEF H		E03N2		1-01 *							1		3-7/8		438
SET NEF H		E09U2		1-02 *											438
SET NEF H				1									3-7/8		438
SET OPI L		C07F1		1-01 *							1		6-5/8		439
SET OPI L		F09D2		1-02 *											439
SET OPI L				1									6-5/8		439
SET SCC H		B02K2		1-01 *							1		3-3/8		440
SET SCC H		B07N2		1-02 *											440
SET SCC H				1									3-3/8		440
SET VPAR L		D05H2		1-01 *							1		2-3/8		441
SET VPAR L		D08M2		1-02 *											441
SET VPAR L				1									2-3/8		441
SET VPE H		B02H2		1-01 *							1		12-7/8		442
SET VPE H		F05N1		1-02 *											442
SET VPE H				1									12-7/8		442
SFC H		C09K1		1-01 *							1		6-1/8		443
SFC H		E08K1		1-02 *											443
SFC H				1									6-1/8		443
SHDN 2(1) H		D04N2		1-01 *	P						1		2		444
SHDN 2(1) H		D07N2		1-02 *											444
SHDN 2(1) H				1									2-0/8		444
SHDN 8(1) H		C05V1		1-01 *	P						1		1-4/8		445
SHDN 8(1) H		C07V1		1-02 *											445
SHDN 8(1) H				1									1-4/8		445
SINGLE DD TRK H		D01E1		1-01 *							1		8-7/8		446
SINGLE DD TRK H		F04U2		1-02 *											446
SINGLE DD TRK H				1									8-7/8		446

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
SINGLE DD TRK L		F04M1												1=PIN RUN	447
SLA H		B03E2		1=01 *	P						1		2=5/8		448
SLA H		B07F2		1=02 *											448
SLA H				1									2=5/8		448
SLAVE SET PLS H		A01S2		1=01 *							1		3=2/8		449
SLAVE SET PLS H		A07S1		1=02 *											449
SLAVE SET PLS H				1									3=2/8		449
SLCT=A		C08P1												1=PIN RUN	450
SLCT=B		C08R1												1=PIN RUN	451
SN0(SB) L		A07D1		1=01 *							1		6=7/8		452
SN0(SB) L		B03V1		1=02 *											452
SN0(SB) L				1									6=7/8		452
SN01(SB) L		A07U2		1=01 *							1		4		453
SN01(SB) L		B03S2		1=02 *											453
SN01(SB) L				1									4=0/8		453
SN02(SB) L		B03U2		1=01 *	P						1		2=2/8		454
SN02(SB) L		B07U1		1=02 *											454
SN02(SB) L				1									2=2/8		454
SN03(SB) L		A03K2		1=01 *							1		2=5/8		455
SN03(SB) L		A07L2		1=02 *											455
SN03(SB) L				1									2=5/8		455
SN04(SB) L		A03E2		1=01 *	F						1		2=2/8		456
SN04(SB) L		A07E1		1=02 *											456
SN04(SB) L				1									2=2/8		456
SN05(SB) L		A03E1		1=01 *							1		3=3/8		457
SN05(SB) L		A07N1		1=02 *											457
SN05(SB) L				1									3=3/8		457
SN06(SB) L		B03U1		1=01 *							1		2=7/8		458
SN06(SB) L		B07T2		1=02 *											458
SN06(SB) L				1									2=7/8		458
SN07(SB) L		A03F1		1=01 *							1		3=2/8		459
SN07(SB) L		A07V1		1=02 *											459
SN07(SB) L				1									3=2/8		459
SN08(SB) L		A03F2		1=01 *							1		2=2/8		460
SN08(SB) L		A07F1		1=02 *											460
SN08(SB) L				1									2=2/8		460
SN09(SB) L		B03S1		1=01 *							1		3=6/8		461
SN09(SB) L		B07D1		1=02 *											461
SN09(SB) L				1									3=6/8		461

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
SN10 H		B03R2		1=01 *							1		2=1/8		462
SN10 H		B07S1		1=02 *											462
SN10 H				1									2=1/8		462
SN11(SB) L		A03H1		1=01 *							1		3=4/8		463
SN11(SB) L		B07C1		1=02 *											463
SN11(SB) L				1									3=4/8		463
SN12 H		A03H2		1=01 *	P						1		2=2/8		464
SN12 H		A07H1		1=02 *											464
SN12 H				1									2=2/8		464
SN13(SB) L		A07U1		1=01 *							1		3=7/8		465
SN13(SB) L		B03R1		1=02 *											465
SN13(SB) L				1									3=7/8		465
SN14 H		B03P2		1=01 *							1		2=3/8		466
SN14 H		B07N1		1=02 *											466
SN14 H				1									2=3/8		466
SN15(SB) L		A03K1		1=01 *							1		3=6/8		467
SN15(SB) L		B07F1		1=02 *											467
SN15(SB) L				1									3=6/8		467
SPACE H		D07T2		1=01 *							1		1=4/8		468
SPACE H		D09T2		1=02 *											468
SPACE H				1									1=4/8		468
SPACE L		C07T2		1=01 *							1		5=7/8		469
SPACE L		E04F2		1=02 *							2		4=1/8		469
SPACE L		F05P1		1=03 *											469
SPACE L				1									10=0/8		469
SPR H		B03E1		1=01 *							1		2=6/8		470
SPR H		B07E2		1=02 *											470
SPR H				1									2=6/8		470
SS0(1) H		B01H2		1=01 *							1		13=5/8		471
SS0(1) H		F06K2		1=02 *											471
SS0(1) H				1									13=5/8		471
SS1(SB) L		B01P2		1=01 *							1		5=1/8		472
SS1(SB) L		C06V1		1=02 *											472
SS1(SB) L				1									5=1/8		472
SS2(SB) L		B01M2		1=01 *							1		7=7/8		473
SS2(SB) L		D06K2		1=02 *											473
SS2(SB) L				1									7=7/8		473
SSC L		F07S1		1=01 *	P						1		1=4/8		474
SSC L		F09S1		1=02 *											474
SSC L				1									1=4/8		474
ST CLK		D04R2		1=01 *	P						1		2		475
ST CLK		D07R2		1=02 *											475
ST CLK				1									2=0/8		475

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
STOP(0) H		F07R1		1-01 *	P						1		1-4/8		476
STOP(0) H		F09R1		1-02 *											476
STOP(0) H				1									1-4/8		476
STOP(SB) L		A01V2		1-01 *							1		3-4/8		477
STOP(SB) L		A07V2		1-02 *											477
STOP(SB) L				1									3-4/8		477
SYNC CLK 4 L		C02P1		1-01 *							1		9-7/8		478
SYNC CLK 4 L		F04U1		1-02 *											478
SYNC CLK 4 L				1									9-7/8		478
TAPE SPEED CLK H		B01B2		1-01 *							1		14-5/8		479
TAPE SPEED CLK H		F06S1		1-02 *											479
TAPE SPEED CLK H				1									14-5/8		479
TAPE WRT CLK H		B02E2		1-01 *							1		4		480
TAPE WRT CLK H		C07D2		1-02 *											480
TAPE WRT CLK H				1									4-0/8		480
TM 1 (0) H		A07B2		1-01 *							1		3-6/8		481
TM 1 (0) H		A01B1		1-02 *											481
TM 1 (0) H				1									3-6/8		481
TMRK H		C07U1		1-01 *	P						1		1-4/8		482
TMRK H		C09U1		1-02 *											482
TMRK H				1									1-4/8		482
TMRK L		F04C1		1-01 *	P						1		1-5/8		483
TMRK L		F05L1		1-02 *	P						2		1-4/8		483
TMRK L		F07L1		1-03 *											483
TMRK L				1									3-1/8		483
TMWIP H		C04F1		1-01 *	P						1		2-1/8		484
TMWIP H		C07D1		1-02 *											484
TMWIP H				1									2-1/8		484
TRA(1) L		B06L2		1-01 *							1		2-1/8		485
TRA(1) L		B09B1		1-02 *											485
TRA(1) L				1									2-1/8		485
TUR H		A02S2		1-01 *							1		6-6/8		486
TUR H		C09N1		1-02 *											486
TUR H				1									6-6/8		486
US 0		B09J2												1-PIN RUN	487
US 1		B09L1												1-PIN RUN	488
US 2		B09E1												1-PIN RUN	489
W CLK H		B04R1		1-01 *							1		2-4/8		490
W CLK H		B08R1		1-02 *											490
W CLK H				1									2-4/8		490

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
WB CLK H		D05A1		1-01 *							1		1-6/8		491
WB CLK H		D07H1		1-02 *											491
WB CLK H				1									1-6/8		491
WD 3 L		B01E1		1-01 *							1		4-3/8		492
WD 3 L		B07L2		1-02 *											492
WD 3 L				1									4-3/8		492
WD 4 L		B01F2		1-01 *							1		3-5/8		493
WD 4 L		B07B1		1-02 *											493
WD 4 L				1									3-5/8		493
WD BFO 0(1) H		D05B1		1-01 *							1		1-6/8		494
WD BFO 0(1) H		D07J1		1-02 *							2		1-3/8		494
WD BFO 0(1) H		D06R2		1-03 *	P						1		1-5/8		494
WD BFO 0(1) H		D08T2		1-04 *											494
WD BFO 0(1) H				1									4-6/8		494
WD BFO 1(1) H		D05J1		1-01 *	P						2		1-3/8		495
WD BFO 1(1) H		D06P2		1-02 *	P						2		0-4/8		495
WD BFO 1(1) H		D07P1		1-03 *	P						2		1-3/8		495
WD BFO 1(1) H		D08R2		1-04 *											495
WD BFO 1(1) H				1									3-2/8		495
WD BFO 2(1) H		D05F1		1-01 *	P						1		1-3/8		496
WD BFO 2(1) H		D07E1		1-02 *							1		1-3/8		496
WD BFO 2(1) H		D06N2		1-03 *	P						2		1-3/8		496
WD BFO 2(1) H		D08P2		1-04 *											496
WD BFO 2(1) H				1									4-1/8		496
WD BFO 3(1) H		D05L1		1-01 *	P						1		1-1/8		497
WD BFO 3(1) H		D06M2		1-02 *	P						2		1-5/8		497
WD BFO 3(1) H		D07V2		1-03 *	P						2		1-3/8		497
WD BFO 3(1) H		D08N2		1-04 *											497
WD BFO 3(1) H				1									4-1/8		497
WD BFO 4(1) H		D06F2		1-01 *	P						1		0-5/8		498
WD BFO 4(1) H		D07K1		1-02 *	P						2		1-3/8		498
WD BFO 4(1) H		D08J2		1-03 *											498
WD BFO 4(1) H				1									2-0/8		498
WD BFO 5(1) H		D05K1		1-01 *	P						1		1-3/8		499
WD BFO 5(1) H		D06E2		1-02 *	P						2		1-2/8		499
WD BFO 5(1) H		D07L1		1-03 *	P						2		1-2/8		499
WD BFO 5(1) H		D08H2		1-04 *											499
WD BFO 5(1) H				1									3-7/8		499
WD BFO 6(1) H		D05B2		1-01 *	P						1		2-3/8		500
WD BFO 6(1) H		D08F2		1-02 *							2		1-5/8		500
WD BFO 6(1) H		D07M1		1-03 *							1		3-5/8		500
WD BFO 6(1) H		E06S2		1-04 *											500
WD BFO 6(1) H				1									7-5/8		500

RUN NAME	A/P PIN	ORDER PIN NAME	BAY = ORDER	Q	DRAW	RV	RG	Y	OPT	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
WD WBO P H		F06D1	1-01 *	P							2		1-3/8	512
WD WBO P H		F07J2	1-02 *								2		17-3/8	512
WD WBO P H		A01B2	1-03 *											512
WD WBO P H			1										18-6/8	512
WDR(0) H		E04E2	1-01 *								1		2	513
WDR(0) H		E07E2	1-02 *											513
WDR(0) H			1										2-0/8	513
WDR(1) H		E04D2	1-01 *								1		2	514
WDR(1) H		E07D2	1-02 *								2		6-1/8	514
WDR(1) H		C05K2	1-03 *											514
WD WBO P(1) H			1										8-1/8	514
WFMK L		A01T2	1-01 *								1		5-7/8	515
WFMK L		C04F2	1-02 *	P							1		2	515
WFMK L		C07F2	1-03 *	P							2		1-4/8	515
WFMK L		C09F2	1-04 *											515
WFMK L			1										9-3/8	515
WRITE END L		A09V1	1-01 *								1		13-5/8	516
WRITE END L		F09T2	1-02 *	P							2		1-4/8	516
WRITE END L		F07T2	1-03 *											516
WRITE END L			1										15-1/8	516
WRITE H		A09R2	1-01 *	P							2		1-4/8	517
WRITE H		A07R2	1-02 *								1		12-3/8	517
WRITE H		E05S1	1-03 *								2		10-5/8	517
WRITE H		B02D2	1-04 *											517
WRITE H			1										24-4/8	517
WRITE IDB L		D06F2	1-01 *	P							1		1-6/8	518
WRITE IDB L		D07F1	1-02 *											518
WRITE IDB L			1										1-6/8	518
WRITE L		A08P1	1-01 *	P							1		1	519
WRITE L		A09P1	1-02 *								1		4-2/8	519
WRITE L		A01P2	1-03 *											519
WRITE L			1										5-2/8	519
WRL H		B03K2	1-01 *								1		2-5/8	520
WRL H		B07M2	1-02 *								2		1-4/8	520
WRL H		B09M2	1-03 *											520
WRL H			1										4-1/8	520
WRP 0 L		F06N1											1-PIN HUH	521
WRP 1 L		F06N2	1-01 *	P							1		2-1/8	522
%RP 1 L		F07B2	1-02 *											522
WRP 1 L			1										2-1/8	522
WRP 2 L		F06U2	1-01 *								1		2-3/8	523
WRP 2 L		F07C1	1-02 *											523
WRP 2 L			1										2-3/8	523

RUN NAME	A/P PIN	ORDER PIN NAME	BAY = ORDER	Q	DRAW	RV	RG	Y	OPT	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG	RUN NUMBER
WD BFO 7(1) H		D05E1	1-01 *								1		2-2/8	501
WD BFO 7(1) H		D08E2	1-02 *								2		1-5/8	501
WD BFO 7(1) H		D07N1	1-03 *								1		3-5/8	501
WD BFO 7(1) H		E06T2	1-04 *											501
WD BFO 7(1) H			1										7-4/8	501
WD BFO P(1) H		C07R2	1-01 *								1		2-1/8	502
WD BFO P(1) H		D08D1	1-02 *											502
WD BFO P(1) H			1										2-1/8	502
WD WBO 0(1) H		D06D1	1-01 *								1		6-1/8	503
WD WBO 0(1) H		F07E1	1-02 *								2		12-1/8	503
WD WBO 0(1) H		B01V1	1-03 *											503
WD WBO 0(1) H			1										18-2/8	503
WD WBO 1(1) H		D06E1	1-01 *								1		7-1/8	504
WD WBO 1(1) H		F07P1	1-02 *								2		13-3/8	504
WD WBO 1(1) H		B01U1	1-03 *											504
WD WBO 1(1) H			1										20-4/8	504
WD WBO 2(1) H		D06H2	1-01 *								1		5-5/8	505
WD WBO 2(1) H		F07D1	1-02 *								2		12-1/8	505
WD WBO 2(1) H		B01T2	1-03 *											505
WD WBO 2(1) H			1										17-6/8	505
WD WBO 3(1) H		D06J2	1-01 *								1		6-7/8	506
WD WBO 3(1) H		F07R2	1-02 *								2		16-5/8	506
WD WBO 3(1) H		A01R2	1-03 *											506
WD WBO 3(1) H			1										23-4/8	506
WD WBO 4(1) H		F06L2	1-01 *	P							1		1	507
WD WBO 4(1) H		F07F1	1-02 *								2		13-1/8	507
WD WBO 4(1) H		B01L2	1-03 *											507
WD WBO 4(1) H			1										14-1/8	507
WD WBO 5 L		C04J2	1-01 *								1		4-3/8	508
WD WBO 5 L		D07F2	1-02 *											508
WD WBO 5 L			1										4-3/8	508
WD WBO 5(1) H		F06P2	1-01 *	P							2		1-1/8	509
WD WBO 5(1) H		F07K2	1-02 *								2		16-1/8	509
WD WBO 5(1) H		A01N2	1-03 *											509
WD WBO 5(1) H			1										17-2/8	509
WD WBO 6(1) H		F06P1	1-01 *	P							2		1-5/8	510
WD WBO 6(1) H		F07L2	1-02 *								2		16-7/8	510
WD WBO 6(1) H		A01J2	1-03 *											510
WD WBO 6(1) H			1										18-4/8	510
WD WBO 7(1) H		F06R1	1-01 *	P							1		1	511
WD WBO 7(1) H		F07N1	1-02 *								2		17-5/8	511
WD WBO 7(1) H		A01E1	1-03 *											511
WD WBO 7(1) H			1										18-5/8	511

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH FLAG	EXCEPTIONS	RUN NUMBER
WRP 3 L		B04S1		1-01 *							1		12-5/8		524
WRP 3 L		F06V2		1-02 *	P						2		1		524
WRP 3 L		F07V2		1-03 *							1		6-7/8		524
WRP 3 L		D05U2		1-04 *											524
WRP 3 L				1									20-4/8		524
WRP0+WRP4 L		C04N2		1-01 *							2		9-5/8		525
WRP0+WRP4 L		F07M2		1-02 *							1		13-3/8		525
WRP0+WRP4 L		B01S2		1-03 *							2		7-7/8		525
WRP0+WRP4 L		D06S1		1-04 *											525
WRP0+WRP4 L				1									30-7/8		525
WRP4 L		F05B1		1-01 *							1		6-3/8		526
WRP4 L		D06B2		1-02 *											526
WRP4 L				1									6-3/8		526
WRT CLK H		B07A1		1-01 *							1		4-1/8		527
WRT CLK H		C05D1		1-02 *											527
WRT CLK H				1									4-1/8		527
WRT STRB H		D07V1		1-01 *	P						1		1		528
WRT STRB H		D08V1		1-02 *											528
WRT STRB H				1									1-0/8		528
X WD P H		D05C1		1-01 *							2		2-2/8		529
X WD P H		D07R1		1-02 *							1		5-1/8		529
X WD P H		F06E1		1-03 *											529
X WD P H				1									7-3/8		529
X WD 4 H		D05D2		1-01 *							1		1-7/8		530
X WD 4 H		D07P2		1-02 *											530
X WD 4 H				1									1-7/8		530
ZERO FILL(1) H		C08V2		1-01 *							1		4-5/8		531
ZERO FILL(1) H		E06B2		1-02 *											531
ZERO FILL(1) H				1									4-5/8		531

EXTERNAL COMPONENT TABLE

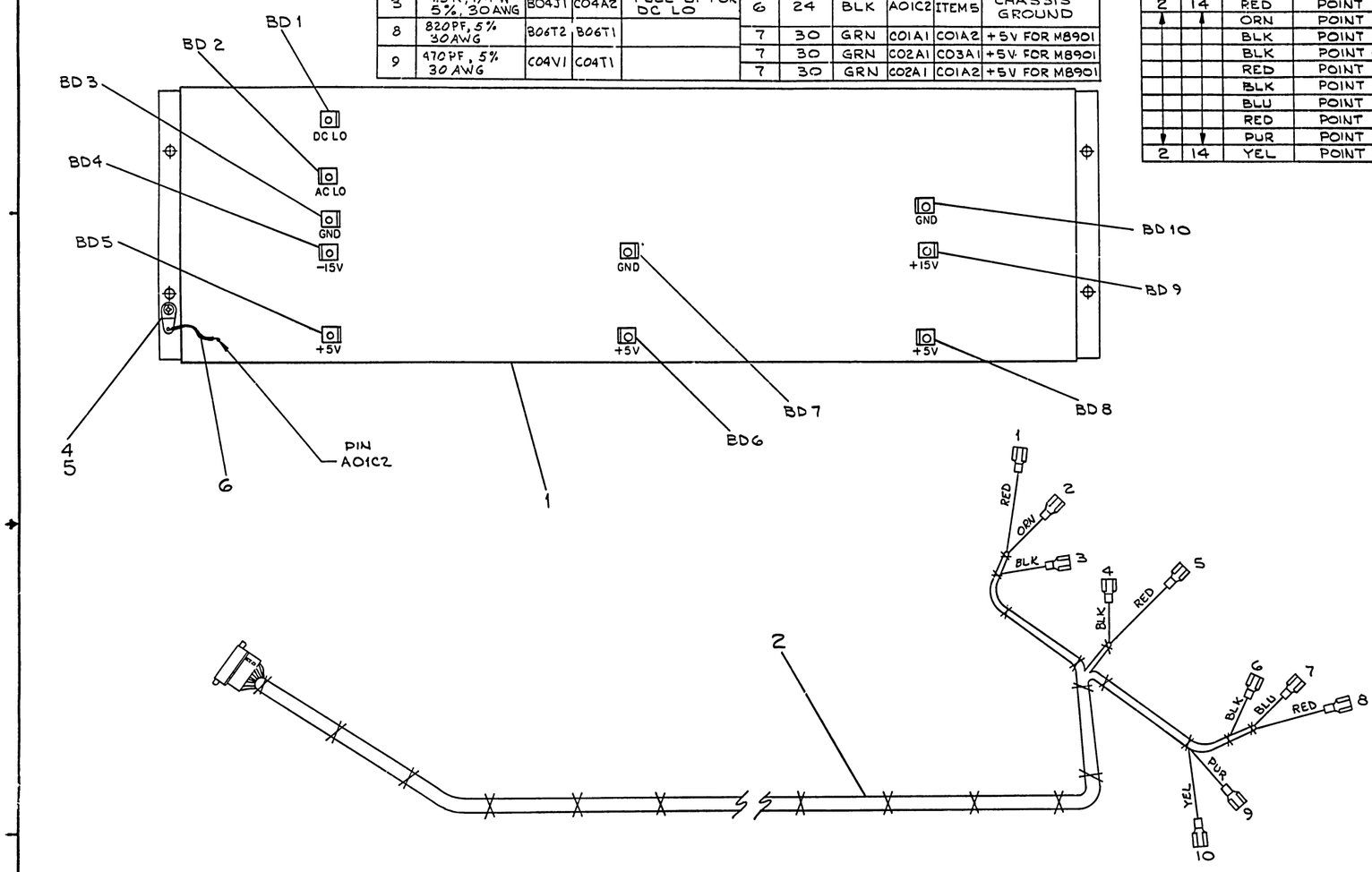
ITEM NO	DESCRIPTION	FROM	TO	REMARKS
3	1.5K, 1/4 W 5%, 30 AWG	B04J1	C04A2	PULL-UP FOR DC LO
8	820PF, 5% 30AWG	B06T2	B06T1	
9	470PF, 5% 30 AWG	C04V1	C04T1	

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM	TO	REMARKS
6	24	BLK	A01C2	ITEM 5	CHASSIS GROUND
7	30	GRN	C01A1	C01A2	+5V FOR M8901
7	30	GRN	C02A1	C03A1	+5V FOR M8901
7	30	GRN	C02A1	C01A2	+5V FOR M8901

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	DESCRIPTION COLOR	FROM HARNESS POINT	TO BOARD POINT
2	14	RED	POINT 1	BD 8 - +5V
↑	↑	ORN	POINT 2	BD 9 - +15V
		BLK	POINT 3	BD 10 - GND
		BLK	POINT 4	BD 7 - GND
		RED	POINT 5	BD 6 - +5V
		BLK	POINT 6	BD 3 - GND
		BLU	POINT 7	BD 4 - -15V
		RED	POINT 8	BD 5 - +5V
↓	↓	PUR	POINT 9	BD 1 - DC LO
2	14	YEL	POINT 10	BD 2 - AC LO



1	470PF 5% 30AWG	7015403	9
1	820 PF 5% 30AWG	7015404	8
A/R	WIRE #30 AWG SOLID GRN	9105740-55	7
A/R	WIRE, #24 AWG SOLID BLK	9107688-00	6
1	TERMINAL, SOLDER SCR MOUNT	9006766-00	5
1	SCR. PHL PAN HD #8 32x.25	9006035-1	4
1	1.5K Ω. 1/4W 5%, 30 AWG	7407751	3
1	HARNESS, LOGIC (TMØ3)	D-IA-7013614-0-0	2
1	WIRED ASSY (TMØ3)	D-AD-7013615-0-0	1
	DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE MILLIMETER OVER 1 TO 5	OVER 5 TO 30	OVER 30 TO 100	OVER 100 TO 300	OVER 300 TO 1000	OVER 1000 TO 2000
SURFACE QUALITY IN MICROINCHES	MEDIUM ☐	±0.1	±0.2	±0.3	±0.4	±0.8	±1.0
	PREFERRED ☐	±0.3	±0.4	±0.6	±1.0	±1.6	±2.5

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN.		
CHK'D		
ENG.		
PROJ ENG.		
PROD		
NEXT HIGHER ASSY.		
E-IA-TMØ3-Ø-Ø		
SCALE		
SHEET 1 OF 1		

FIRST USED ON TMØ3

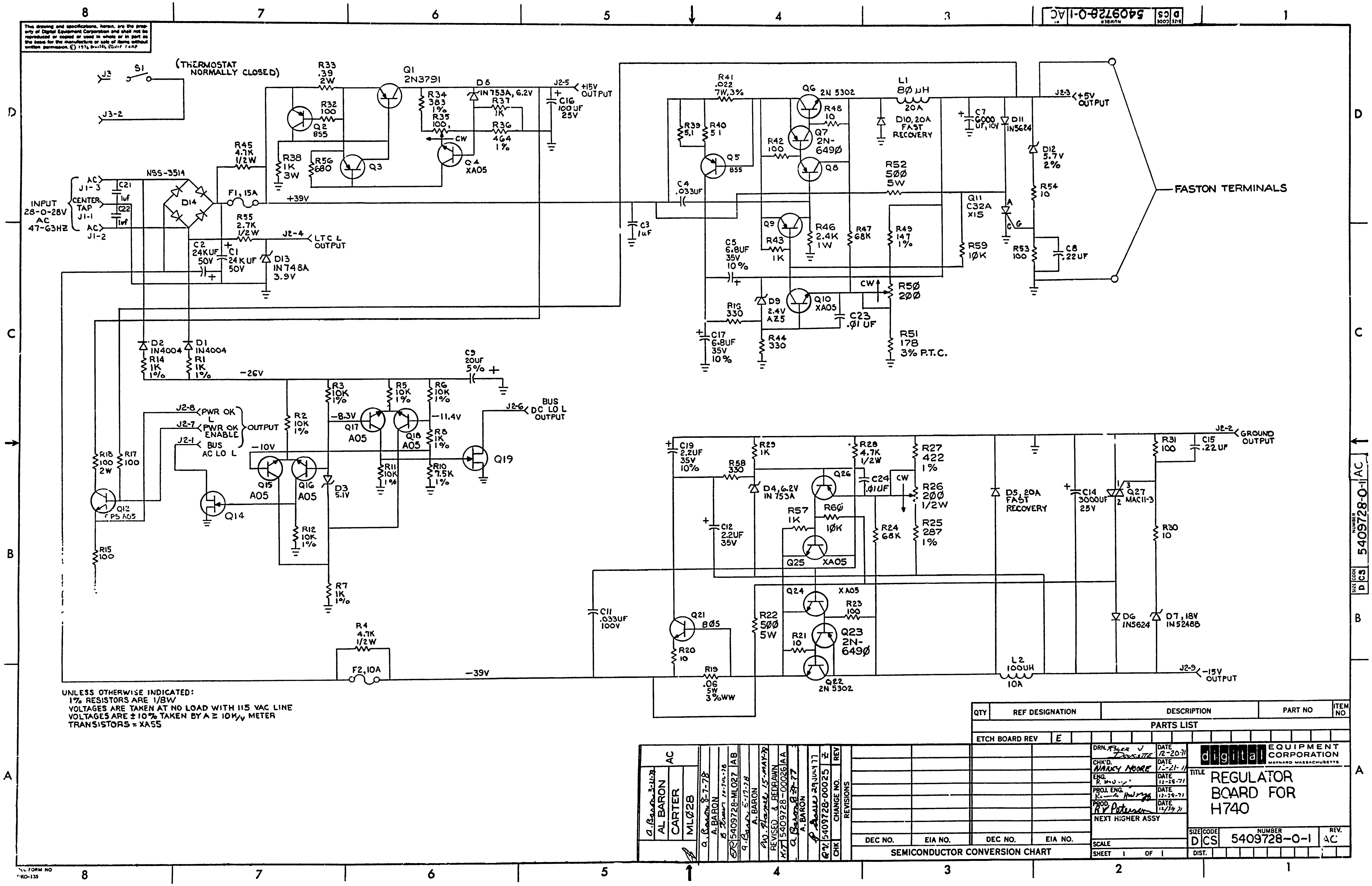
digital

TITLE
HARNESS / LOGIC ASSY (TMØ3)

SIZE D | CODE AD | NUMBER 7013616-0-0 | REV. A

DIST

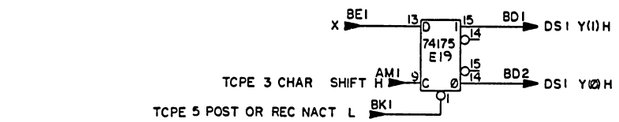
REVISIONS		
CHK	CHANGE NO.	REV.
P. RAIKUNEN	7013616-00001	A
P. RAIKUNEN	6-FEB-76	

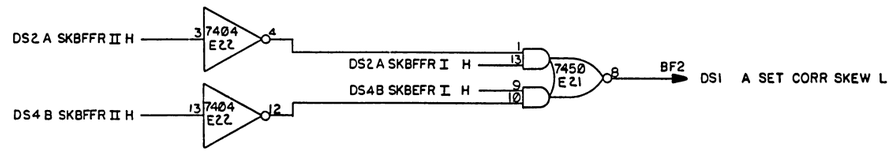


(THERMOSTAT NORMALLY CLOSED)
INPUT 28-0-28V AC 47-63HZ
FASTON TERMINALS
J2-3 +5V OUTPUT
J2-5 +15V OUTPUT
J2-4 LTC L OUTPUT
J2-6 BUS DC LO L OUTPUT
J2-8 PWR OK L
J2-7 PWR OK ENABLE
J2-1 BUS AC LO L
OUTPUT
J2-2 GROUND OUTPUT
J2-9 -15V OUTPUT
UNLESS OTHERWISE INDICATED:
1% RESISTORS ARE 1/8W
VOLTAGES ARE TAKEN AT NO LOAD WITH 115 VAC LINE
VOLTAGES ARE ± 10% TAKEN BY A ≥ 10K/V METER
TRANSISTORS = XA55
PARTS LIST
QTY
REF DESIGNATION
DESCRIPTION
PART NO
ITEM NO
ETCH BOARD REV E
SEMICONDUCTOR CONVERSION CHART
DEC NO.
EIA NO.
REVISED & REDRAWN
CHANGE NO.
REVISIONS
REV
CHK
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE REGULATOR BOARD FOR H740
NEXT HIGHER ASSY
SIZE D
CODE CS
NUMBER 5409728-0-1
REV. AC
SCALE
SHEET 1 OF 1

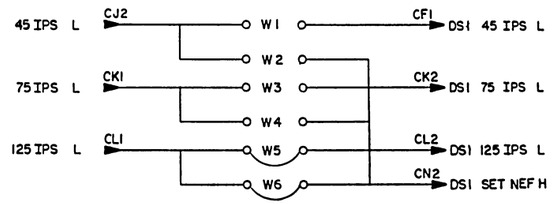
	SLOT 1	SLOT 2	SLOT 3
X	SINGLE DD TRK H		INC COND(I) H
Y (I) H	CER (I) H		INC DATA (I) H

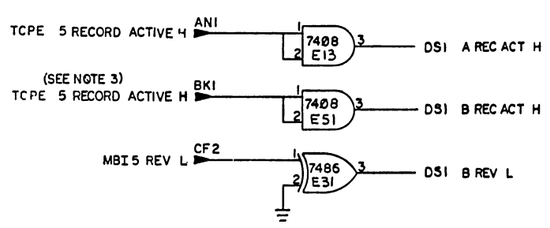
USE X,Y CHART TO DETERMINE INPUTS AND OUTPUTS OF 74175 FLOP.

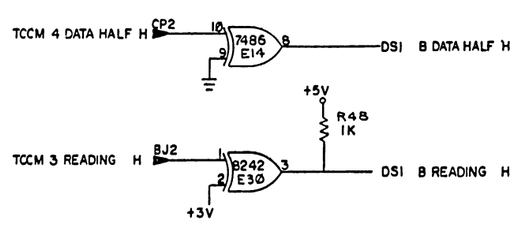


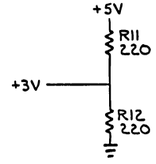


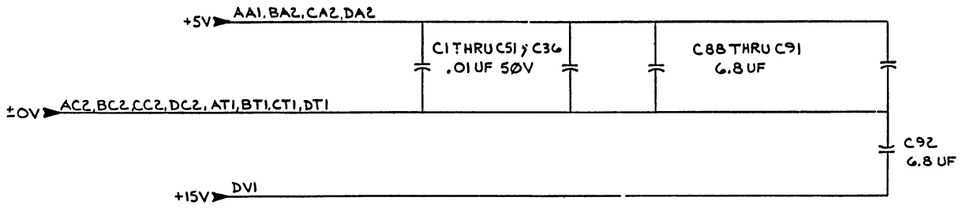
NOTES:
JUMPERS W1 THRU W6 INDICATE THE TAPE SPEED THE MODULE IS BUILT FOR. CHANGING THE JUMPERS DOES NOT CHANGE THE SPEED CAPABILITY OF THE MODULE.











NOTES

1. M8901 MODULES ARE LOCATED IN SECTIONS C,D,E,F OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.
2. PIN BK1 IS "TPCE 5 POST OR REC NACT L" ON ALL M8901'S WHEN IN TM02.

REVISIONS			
CHK	CHANGE NO.		REV.
	M8901-YD-MR0071		K
REVISED PER DRAWN 12-Jan-79			
J. HESS			
J.T.H. 11 May 78			

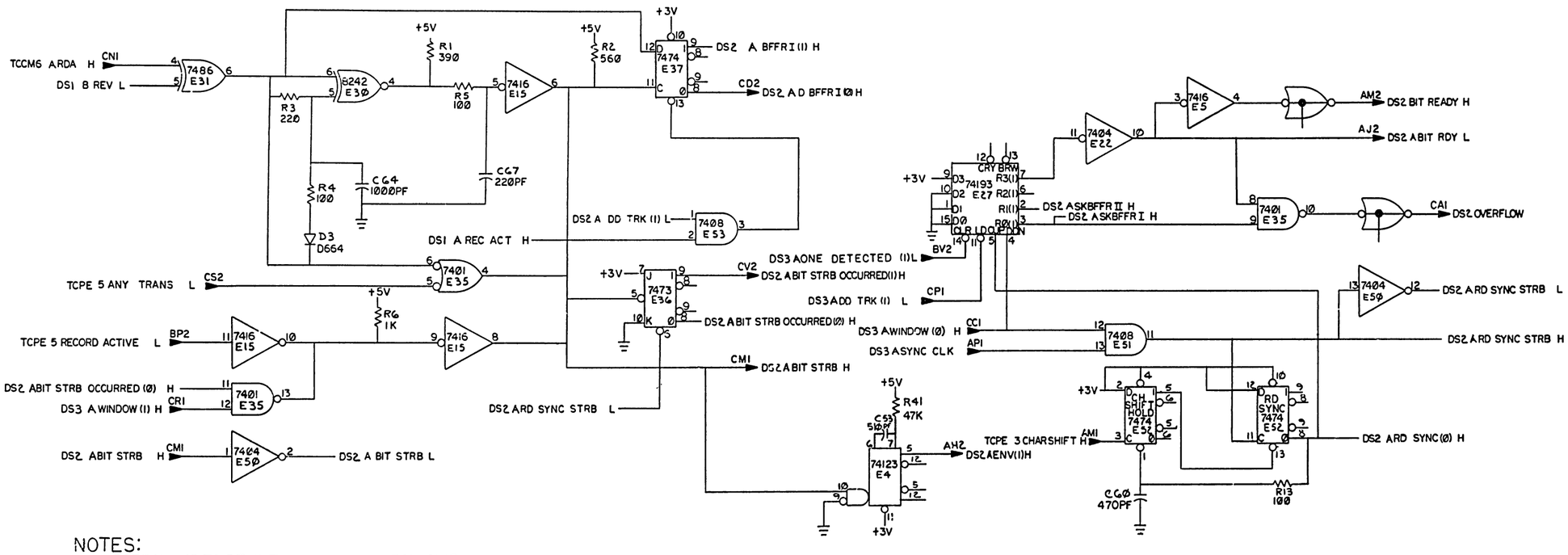
DRN		12-1-78
CHK'D		12-7-78
ENG.		12-7-78
PROJ. ENG.		12-1-78
PROD.		12-1-78
NEXT HIGHER ASSY.		
SCALE		
SHEET	1 OF 7	

FIRST USED ON

TITLE: DATA SYNC (DSI)

SIZE	CODE	NUMBER	REV.
D	CS	M8901-YD-1	K

DIST.



NOTES:

1. PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 A IS BIT 2
   MODULE IN SLOT 2 A IS BIT P
   MODULE IN SLOT 3 A IS BIT 7

   EXAMPLE
   A RDA H – E01 NI = RDA 2 H
   A RDA H – E02 NI = RDA P H } SEE NOTE 2
   A RDA H – E03 NI = RDA 7 H
2. M8901 MODULES ARE LOCATED IN SECTIONS C. D. E. F. OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT A

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS2)	D	CS	M8901-YD-1	K
SCALE	SHEET 2 OF 7	DIST.		

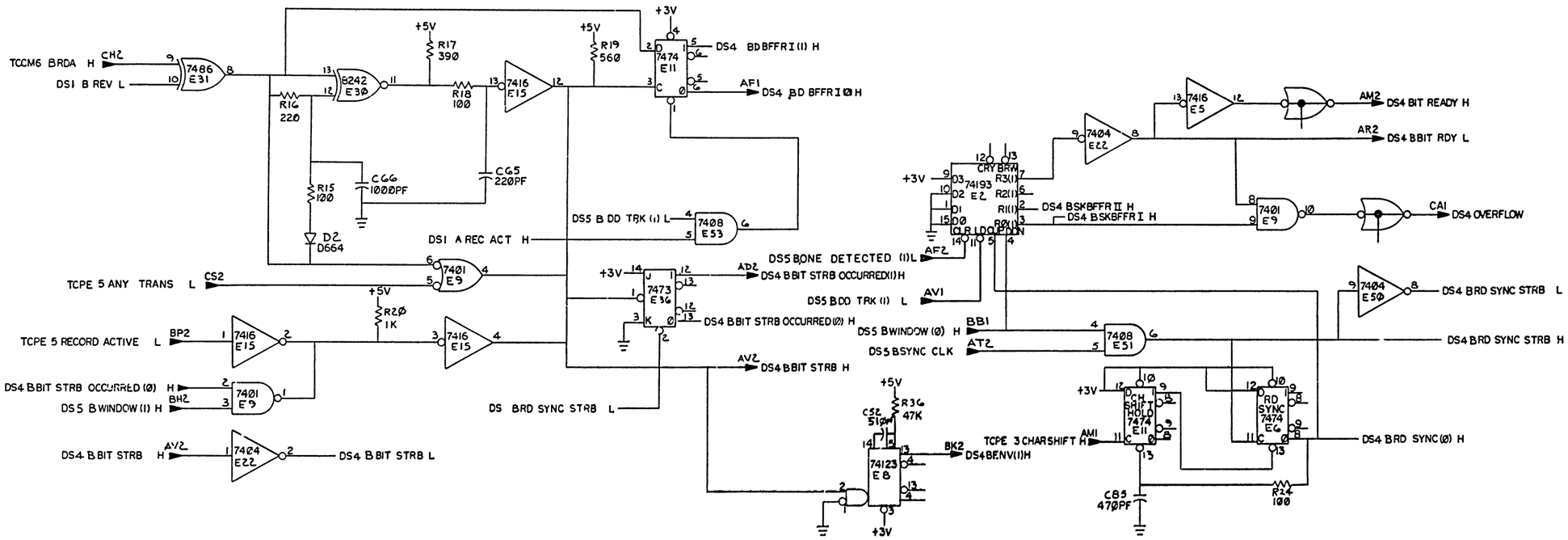
NOTES:
1 PREFIX A IS TO BE INTERPRETED AS FOLLOWS:
MODULE IN SLOT 1 A IS BIT 2
MODULE IN SLOT 2 A IS BIT P
MODULE IN SLOT 3 A IS BIT 7
EXAMPLE:
A RDA H E01 NI RDA 2H
A RDA H E02 NI RDA PH } SEE NOTE 2.
A RDA H E03 NI RDA 7H
2 M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND ONE DD TRK H
DS3 ADD TRK (1) H
7408 E13
BV2
CR2
BL2 DS3 A BFFR A (1) H
7486 E14
BFFRA 74175 E19
BFFRB 74174 E10
CBI
7401 E24
TCCM7 PES B H
DS3 A DD TRK (1) L
CHI DS3 A RDB L
DS3 ABFFR A(0) H
DS3 ABFFR B(1) H
7400 E25
7401 E35
AS2 DS3,5,7 POST DETECT H
BSI DS3 A POST PAT L
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
AMI
BKI
DS3 A SKEW BUFF DATA (1) H
DS2 A D BUFFRI (1) H
DS3 A WINDOW (0) H
CCI
7476 E33
DS3 A ONE DETECTED (1) H
DS3 A ONE DETECTED (1) L
BV2
DS2 A BIT STRB OCCURRED (0) H
DS3 A SKEW BUFF B SO (0) H
74172 E26
DS3 A WINDOW (0) H
REC ACT H
DS3 A DROPPED BIT (1) H
AUI
7400 E48
+3V
DROPPED BIT 74174 E10
TCPE4 RD ADDR 1 (1) H
TCPE4 RD ADDR 2 (1) H
TCPE4 RD ADDR 3 (1) H
BT2
BU1
BU2
74197 E34
DS3 A ONE DETECTED (1) H
DS3 A WINDOW (1) H
CR1
DS2 A BIT STRB OCCURRED (1) H
ENVELOPE 7474 E37
DD TRK 7473 E49
CR2
CP1
DS3 ADD TRK (1) H
DS3 ADD TRK (1) L
DS2 A RD SYNC STRB H
DS1 A REC ACT H
CVI
DS3 A DATA SYNC (1) H
TCPE4 ENABLE SYNC (1) H
BCI
7473 E49
DS2 A BIT STRB H
DS1 B READING H
DS3 A DD TRK (1) L
7408 E53
DS3A+15VCD
BVI TEST POINT
+3V
7474 E32
CR1 DS3 A WINDOW (1) H
CC1 DS3 A WINDOW (0) H
74197 E47
R14 220
C75 6800 PF
R9 2.7K
DV1 +15V
R22 100 1/2W
C76 82 PF
C57 10PF
C58 10PF
Q1 DEC 7805
C70 33UF
C78 3.9UF
R7 3K
R8 1K
R10 5K
PHASE DETECTOR VI 4044 E23 PU
4044 E.3
VCO 4024 E16
C87 .01 µF 50V
API DS3 A SYNC CLK
DS2 A BIT STRB L
DS2 A DATA HALF H
7450 E39
CU1 TEST POINT
DS3 AQUIET GND

DATA BIT A

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS3)	D	CS	M8901-YD-1	K
SCALE	SHEET 3 OF 7	DIST.		



NOTES:

1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 B IS BIT Ø
   MODULE IN SLOT 2 B IS BIT 5
   MODULE IN SLOT 3 B IS BIT 1
   EXAMPLE:
   B RDA H – EØ1 H2 = RDA Ø H
   B RDA H – EØ2 H2 = RDA 5 H } SEE NOTE 2
   B RDA H – EØ3 H2 = RDA 1 H
2. M89Ø1 MODULES ARE LOCATED IN SECTIONS C.D.E.F. OF TMØ3/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT B

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS4)	D	CS	M8901-YD-1	K
SCALE	SHEET 4 OF 7	DIST.		

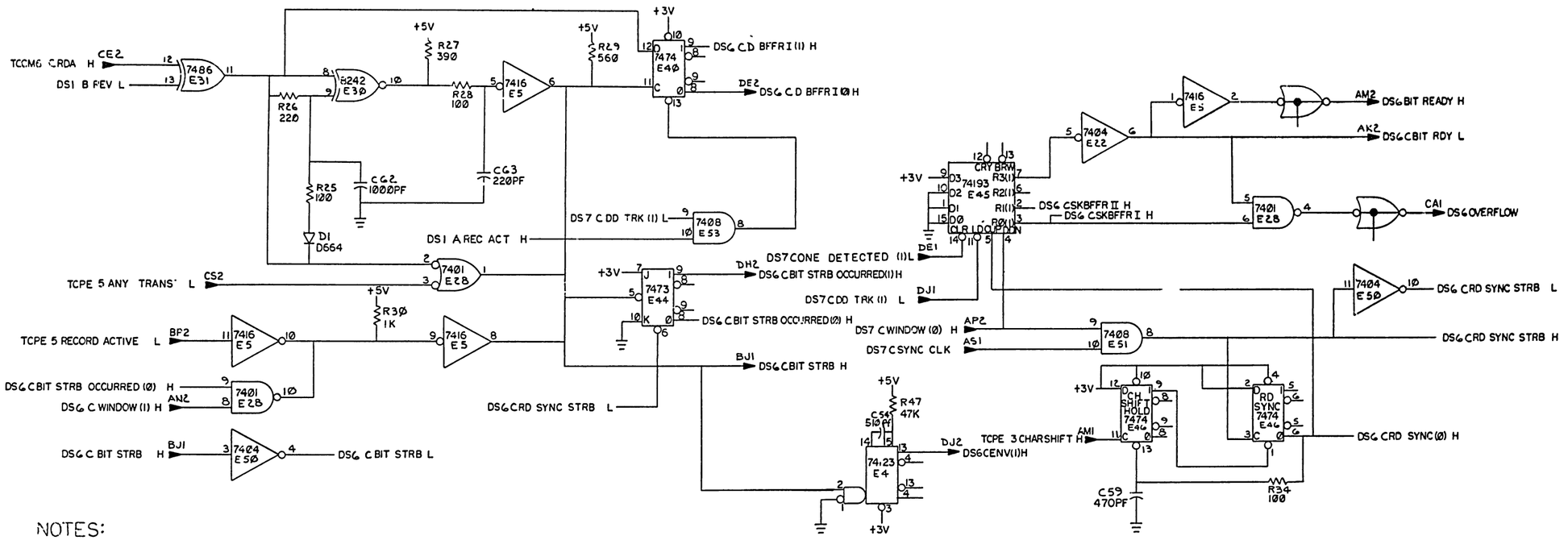
NOTES:
1. PREFIX B IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 B IS BIT Ø
   MODULE IN SLOT 2 B IS BIT 5
   MODULE IN SLOT 3 B IS BIT 1
   EXAMPLE:
   B RDA H E01 H2 RDA Ø H)
   B RDA H E02 H2 RDA 5 H) SEE NOTE 2.
   B RDA H E03 H2 RDA 1 H)
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCI E2 PERR AND ONE DD TRK H
DS5 BDD TRK (1) H
DS5 B BFFR A (1) H
DS5 B SKEW BUFF DATA (1) H
DS4 BD BFFRI (1) H
DS5 B WINDOW (Ø) H
DS5 B SKEW BUFF B SO (Ø) H
DS5 B ONE DETECTED (1) H
DS5 B ONE DETECTED (1) L
DS1 B REC ACT H
DS5 B DROPPED BIT (1) H
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
TCPE4 RD ADDR 1 (1) H
TCPE4 RD ADDR 2 (1) H
TCPE4 RD ADDR 3 (1) H
DS4 BBIT STRB OCCURRED (1) H
DS5 B WINDOW (1) H
DS4 B RD SYNC STRB H
TCPE 5 REC ACT H
DS5 B DD TRK (1) H
DS5 B DD TRK (1) L
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT H
DS5 BBFFR A (Ø) H
DS5 BBFFR B (1) H
DS5 B POST PAT L
DS3,5,7 POST DETECT H
DS5 B RDB L
TCPE4 ENABLE SYNC (1) H
DS4 BBIT STRB H
DS1 B FFADING H
DS5 B DATA SYNC (1) H
DS4 BBIT STRB L
DS4 B DATA HALF H
DS5 B +5V DC
DS5 B QUIET GND
TEST POINT
DS5 B SYNC CLK
DS5 B WINDOW (1) H
DS5 B WINDOW (Ø) H
DS5 B DD TRK (1) H
DS5 B DD TRK (1) L

DATA BIT B

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS5)	D	CS	M8901-YD-1	K
SCALE	SHEET 5 OF 7		DIST.	



NOTES:

1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H-E01 E2=RDA 4 H)
   C RDA H-E02 E2=RDA 6 H} SEE NOTE 2
   C RDA H-E03 E2=RDA 3 H)
2. M8901 MODULE ARE LOCATED IN SECTIONS C.D.E.F. OF TM03/2 LOGIC. THEREFORE PINS IN SECTION A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

DATA BIT C

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS6)	D	CS	M8901-YD-1	K
SCALE	SHEET 6 OF 7	DIST.		

NOTES:
1. PREFIX C IS TO BE INTERPRETED AS FOLLOWS:
   MODULE IN SLOT 1 C IS BIT 4
   MODULE IN SLOT 2 C IS BIT 6
   MODULE IN SLOT 3 C IS BIT 3
   EXAMPLE:
   C RDA H E01 E2 RDA 4 H
   C RDA H E02 E2 RDA 6 H } SEE NOTE 2.
   C RDA H E03 E2 RDA 3 H
2. M8901 MODULES ARE LOCATED IN SECTIONS C D E F OF TM03/2 LOGIC. THEREFORE PINS IN SECTIONS A OF THE MODULE ARE LOCATED IN C ON THE BACKPLANE ETC.

TCPE2 PERR AND ONE DD TRK H
DS7C DD TRK (1) H
7428 E13
BM2
DF2
BM1
DS7C BFFR A (1) H
7486 E14
BFFRA 74175 E15
BFFRB 74174 E10
CLR
TCCM7 RES B H
CBI
7401 E24
DS7C DD TRK (1) L
DJ1
DS7CBFFR A(0)H
DS7CBFFR B(1)H
7400 E25
7401 E28
CJ1 DS7C RDB L
AS2 DS3 5,7 POST DETECT H
BR2 DS7C POST PAT L
TCPE 3 CHAR SHIFT H
AMI
TCPE 5 POST OR REC NACT L
BKI
DS7C SKEW BUFF DATA (1)H
DS6C D BUFFRI (1) H
DS7C WINDOW(2) H
AP2
7476 E41
DS7C ONE DETECTED(1)H
DS7C ONE DETECTED(1) L
DE1
DS6C BIT STRB OCCURRED(0)H
74172 E29
DS7C SKEW BUFF B SO (0) H
DS7C WINDOW (0) H
+3V
DS
REC ACT H
DROPPED BIT 74174 E10
CS1 DS7C DROPPED BIT (1) H
7400 E48
TCPE 3 CHAR SHIFT H
TCPE 5 POST OR REC NACT L
74197 E42
DS7C ONE DETECTED(1)H
DS7C WINDOW (1) H
AN2
TCPE4 RD ADDR 1 (1)H
TCPE4 RD ADDR 2 (1)H
TCPE4 RD ADDR 3 (1)H
BT2
BU1
BU2
DS6C BIT STRB OCCURRED (1)H
DH2
ENVELOPE 7474 E40
DS7C WINDOW(0) H
DS6C RD SYNC STRB H
DS1A REC ACT H
DD TRK 7474 E41
DF2 DS7C DD TRK (1) H
DJ1 DS7C DD TRK (1) L
CU2 DS7C DATA SYNC (1) H

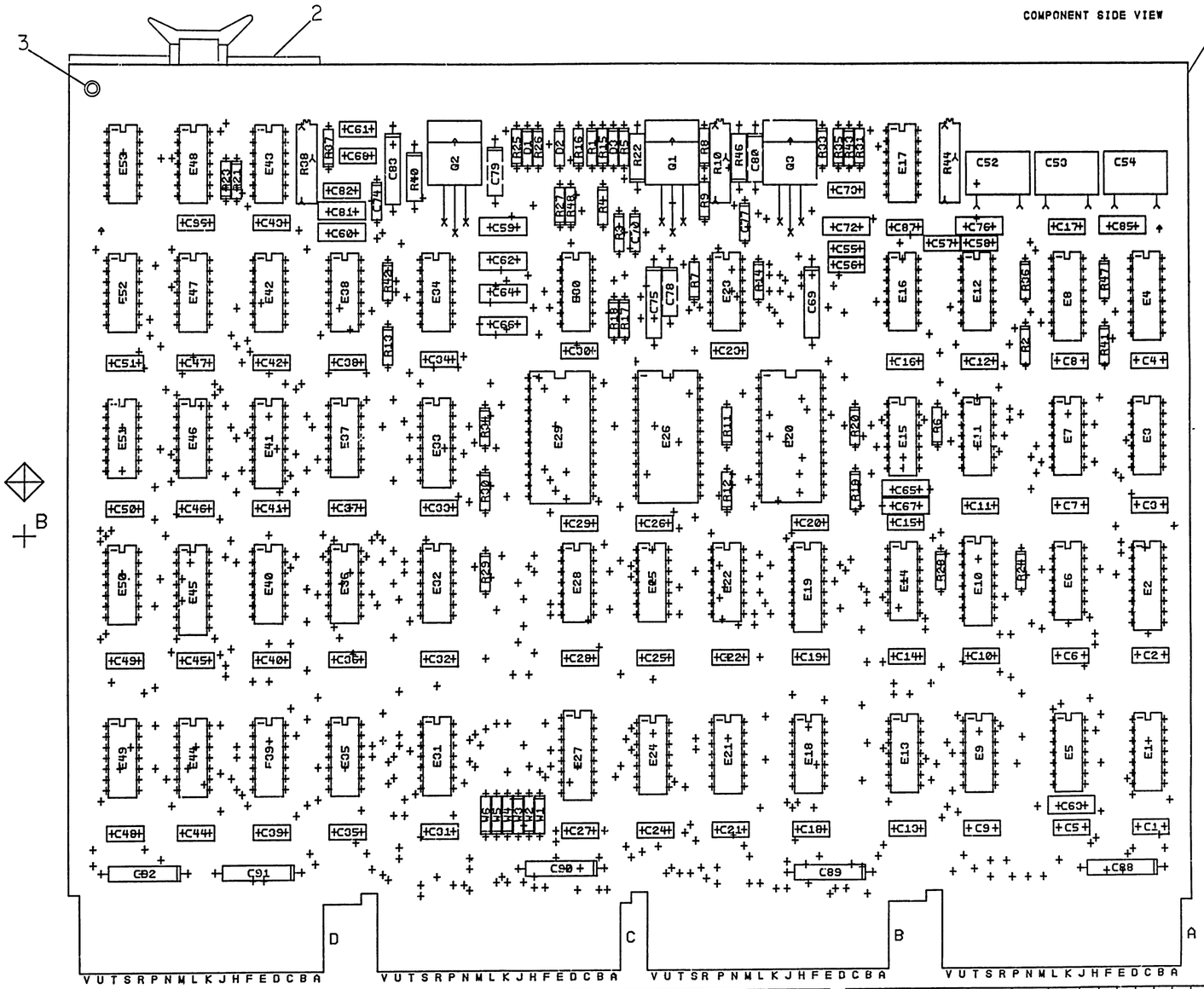
TCPE4 ENABLE SYNC (1) H
BCI
7473 E44
DS6C BIT STRB H
DS1 B READING H
DS7C45VCD
DP2 TEST POINT
+3V
7474 E7
AN2 DS7C WINDOW(1)H
AP2 DS7C WINDOW(0)H
74197 E1
R35 220
C69 68PPF
DVI
+15V
R33 2.7K
C72 82 PF
C56 47PF
C55 .1UF
R46 100 1/2W
4044 E17
PHASE DETECTOR 4044 E17
R31 3K
R43 1K
R44 5K
VCO 4024 E16
Q3 DEC 7805
C77 33UF
C80 39UF
C73 .01
AS1 DS7C SYNC CLK
DS6C BIT STRB L
DS6C DATA HALF H
7450 E39
CT2 TEST POINT
DS7CQUIET GND

DATA BIT C

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SYNC (DS7)	D	CS	M8901-YD-I	K
SCALE	SHEET 7 OF 7	DIST.		

COMPONENT SIDE VIEW



NOTES:

CHK	CHANGE NO	REV
	M8901-YD-MLI	K
	REVISED/REDRAWN	
J.HESS		

SIGNATURES	DATE
DRN. L.METZGER	2-28-78
CHK'D.	1-11-79
ENG. P.RAIKUNEN	4-5-78
PROJ.ENG.P.RAIKUNEN	4-5-78
PROD. P.RAIKUNEN	4-5-78

ETCH REV. F-P2
P.C. DESIGN DATA BASE REV.

digital

TITLE
DATA SYNC

SCALE 2/1 | SIZE D | CODE UA | NUMBER M8901-YD-0 | REV K
SHT. 1 OF 3
NEXT HIGHER ASSY. B-DD-M8901-YD

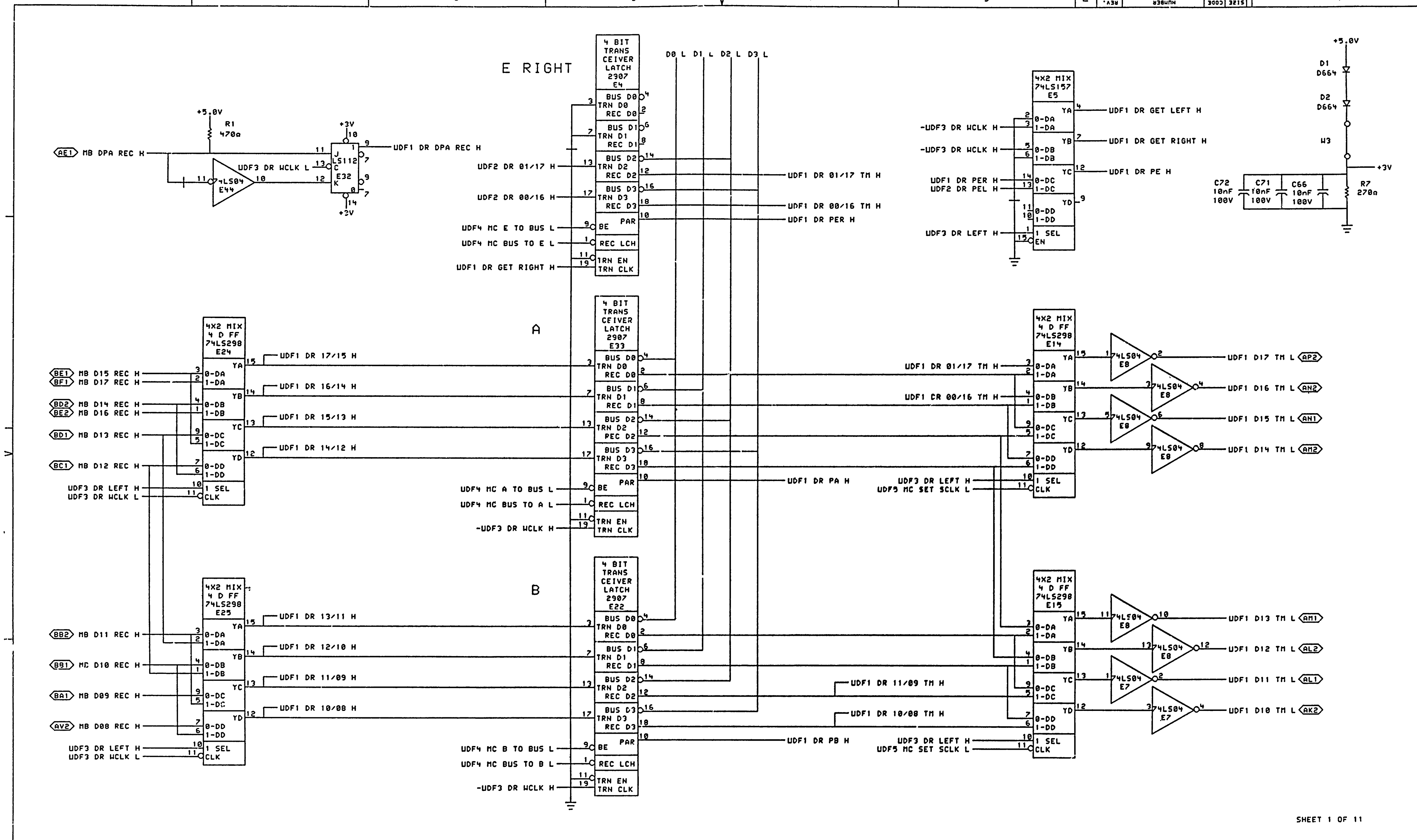
M8901-YD-0 K DUA 2
M8901-YD-C K DUA
1 MS#

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER		DESCRIPTION	QTY	REFERENCE DESIGNATOR
1	1		5010467-00		ETCH BOARD M8901	1	
2	2		9008337-00		HANDLE, FLIP CHIP, MAGENTA	4	
3	3		9006732-00		EYELET, ROLLED FLANGE, .121 OD X	8	
4	4		1000021-00		220.0 MMF 100V 5%200PPM DM15S	3	C63,C65,C67
5	6		1000024-00		470.0 MMF 100V 5%200PPM DM15S	3	C59,C60,C85
6	7		1000042-00		1000.0 MMF 100V 5%200PPM DM15S	3	C62,C64,C66
7	8		1000060-00		6800.0 MMF 200V 10% 192P MYLR	3	C69,C75,C83
8	9		1001610-00		.01 MFD 50V -20+80 Z5U AXIAL	55	C1-C51,C73,C8[illegible],C87,C96
9	10		1003306-00		6.8MFD 35V 10% S.TANT	5	C88-C92
10	11		1002476-00		510.0 MMF 100V 5%200PPM DM15S	3	C52-C54
11	13		1100114-00		D 664 08\75PCB PIV= 25V SP	3	D1-D3
12	15		1300229-00		100 1/4W 5% CC	9	R4,R5,R13,R15,R18,R24,R25,R28,R34
13	16		1300271-00		220 1/4W 5% CC	7	R3,R11,R14,R16,R26,R35,R42
14	17		1300295-00		330 1/4W 5% CC	1	R12
15	18		1300309-00		390 1/4W 5% CC	3	R1,R17,R27
16	20		1300365-00		1 K 1/4W 5% CC	7	R6,R20,R30,R40,R8,R37,R43
17	21		1300426-00		2.7 K 1/4W 5% CC	3	R9,R23,R33
18	22		1302177-00		47 K 1/4W 5% CC	3	R36,R41,R47
19	24		1300432-00		3 K 1/4W 5% CC	3	R7,R21,R31
20	26		1905547-00		7474 FF=D DUAL,EDGE TRIGG	8	E6,E7,E11,E32,E37,E40,E46,E52
21	27		1905575-00		7400 NAND GATE=QUAD 2IN	2	E25,E48
22	28		1905580-00	DEC	7450 A=O=I XPNDBLE GATE=D	2	E21,E39
23	29		1905585-00		7476 FF=JK DUAL,MASTER SL	2	E33,E41
24	30		1905587-00	DEC	7473 FF=JK DUAL,MASTER SL	4	E18,E36,E44,E49
25	31		1905590-00	DEC	7401 NAND GATE=QUAD 2IN,O	4	E9,E24,E28,E35
26	32		1909686-00		7404 INVERTER GATE=HEX 1I	2	E22,E50
27	33		1909712-00	DEC	8242 COMPARATOR=4BIT N,	1	E30
28	34		1909928-00		7416 INVERTER GATE=HEX 1I	2	E5,E15
29	35		1910436-00	DEC	74123 ONE SHOT=DUAL,RETRIG	2	E4,E8
30	36		1910011-00	DEC	7486 X=OR GATE=QUAD 2INPU	2	E14,E31

REVISION HISTORY			BASIC PART NO: M8901											
ENG	ECO NUMBER	REV	SECTION 1 OF 1	DRN: P.BOSSMAN	DATE: 27-MAR-78		D	I	G	I	T	A	L	
	INIT	J	SECTION,VARIATION INDEX	CHK'D: P.RAIKUNEN	DATE: 27-MAR-78	TITLE	PARTS LIST							
J.H	ML001	K	[1] YD			DATA SYNC								
			[2]	DES.ENG: P.RAIKUNEN	DATE: 27-MAR-78									
			[3]											
			[4]											
			[5]			DOCUMENT NUMBER								
			[6]	RESP.ENG.: P.RAIKUNEN	DATE: 27-MAR-78	SIZE	CODE	NUMBER					REV	
			[7]											
			[8]											
			[9]	MFG.ENG.: P.RAIKUNEN	DATE: 27-MAR-78	K	PL	M8901-YD-DBP					K	
			[10]											
			[11]	ASSEMBLY NUMBER:				FILE NAME:					EDIT #	
			[12]	D-UA-M8901-YD-0				M8901K.PLS					10	

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY	REFERENCE DESIGNATOR
31	37		1910018-00	DEC 74193 COUNTER,SYNCHR, UP/D	3	E2,E27,E45
32	38		1910035-00	DEC 74197 COUNTER,ASYNCH UP,HI	6	E1,E3,E12,E34,E42,E47
33	39		1301890-00	560 1/4W 5% CC	3	R2,R19,R29
34	40		1910651-00	DEC 74175 FF-D QUAD	1	E19
35	41		1910652-00	74174 FF-D HEX	1	E10
36	42		1911038-00	4024 OSCILLATOR	2	E16,E38
37	43		1911039-00	4044 PHASE FREQUENCY DETE	3	E17,E23,E43
38	44		1911293-00	74172 REGISTER FILE,16BIT	3	E20,E26,E29
39	45		1910155-00	DEC 7408 AND GATE,POS,QUAD 2I	3	E13,E51,E53
40	46		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	2	W5,W6
41	48		1300228-00	100 1/2W 5% CC	3	R22,R40,R46
42	49		1000015-00	82.0 MMF 100V 5%200PPM DM15S	3	C72,C76,C81
43	50		1000006-00	10.0 MMF 100V 5%200PPM DM15S	6	C55-C58,C61,C68
44	51		1912536-00	DEC 7805 VOLT,REG,FIX +	3	Q1-Q3
45	52		1005328-00	.33 MFD 20V 10% 150D S,TA	3	C70,C74,C77
46	53		1000064-00	3.9MFD 10V 10% 150D S,TA	3	C78-C80
47	54		1309143-09	5 K 3/4W10% POT 100PPM	3	R10,R38,R44
48	55		9008301-01	SCREW,PAN ,PHIL, 4-40X 1/4	3	
49	56		9006557-00	NUT,KEP , 4-40X 1/4 AF	3	

DIGITAL	TITLE	SECTION	SIZE	CODE	DOCUMENT NUMBER	REV
	DATA SYNC	1 OF 1	K	PL	M8901-YD-DBP	K


E RIGHT
4 BIT TRANS CEIVER LATCH 2907 E4
4 BIT TRANS CEIVER LATCH 2907 E33
4 BIT TRANS CEIVER LATCH 2907 E22
A
B
D0 L D1 L D2 L D3 L
4X2 MIX 74LS157 E5
4X2 MIX 4 D FF 74LS298 E24
4X2 MIX 4 D FF 74LS298 E25
4X2 MIX 4 D FF 74LS298 E14
4X2 MIX 4 D FF 74LS298 E15
+5.0V
R1 470Ω
74LS04 E44
LS112 E32
MB DPA REC H
UDF3 DR WCLK L
UDF1 DR DPA REC H
UDF2 DR 01/17 H
UDF2 DR 00/16 H
UDF4 MC E TO BUS L
UDF4 MC BUS TO E L
UDF1 DR GET RIGHT H
UDF1 DR 01/17 TM H
UDF1 DR 00/16 TM H
UDF1 DR PER H
-UDF3 DR WCLK H
UDF1 DR PER H
UDF2 DR PEL H
UDF3 DR LEFT H
UDF1 DR GET LEFT H
UDF1 DR GET RIGHT H
UDF1 DR PE H
D1 D664
D2 D664
W3
C72 10nF 100V
C71 10nF 100V
C66 10nF 100V
R7 270Ω
+3V
MB D15 REC H
MB D17 REC H
MB D14 REC H
MB D16 REC H
MB D13 REC H
MB D12 REC H
UDF3 DR LEFT H
UDF3 DR WCLK L
UDF1 DR 17/15 H
UDF1 DR 16/14 H
UDF1 DR 15/13 H
UDF1 DR 14/12 H
UDF4 MC A TO BUS L
UDF4 MC BUS TO A L
-UDF3 DR WCLK H
UDF1 DR PA H
UDF5 MC SET SCLK L
UDF1 D17 TM L
UDF1 D16 TM L
UDF1 D15 TM L
UDF1 D14 TM L
MB D11 REC H
MC D10 REC H
MB D09 REC H
MB D08 REC H
UDF1 DR 13/11 H
UDF1 DR 12/10 H
UDF1 DR 11/09 H
UDF1 DR 10/08 H
UDF4 MC B TO BUS L
UDF4 MC BUS TO B L
UDF1 DR 11/09 TM H
UDF1 DR 10/08 TM H
UDF1 DR PB H
UDF1 D13 TM L
UDF1 D12 TM L
UDF1 D11 TM L
UDF1 D10 TM L
SHEET 1 OF 11

REVISIONS		
CHK	CHANGE NO.	REV
	W85V 5-L004	E

digital

DRN.	DATE 19-FEB-79	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION: AD8	
PS:<MCQUAIN>UDF1Y.DRW	13-NOV-78 00:00	SHEET 1 OF 1	
FIRST USED ON OPTION MODEL: TM03		NEXT HIGHER ASSEMBLY:	

TITLE: UNIVERSAL DATA FORMATTER (DR1)

SIZE	CODE	NUMBER	REV.
D	CS	M8915-0-UDF1	E

C

D

E LEFT

4X2 MIX 4 D FF 74LS298 E20

4X2 MIX 4 D FF 74LS298 E13

4X2 MIX 4 D FF 74LS298 E19

4 BIT TRANS CEIVER LATCH 2907 E27

4 BIT TRANS CEIVER LATCH 2907 E16

4 BIT TRANS CEIVER LATCH 2907 E10

4X2 MIX 4 D FF 74LS298 E9

4X2 MIX 4 D FF 74LS298 E2

4X2 MIX 4 D FF 74LS298 E11

PAR GEN 74S280 E12

74LS04 E7

74LS04 E1

74LS04 E44

AV1 MB D07 REC H
MB D09 REC H
AU2 MB D06 REC H
MB D08 REC H
AU1 MB D05 REC H
AT2 MB D04 REC H
UDF3 DR LEFT H
UDF3 DR WCLK L

AS2 MB D03 REC H
AS1 MB D02 REC H
AR2 MB D01 REC H
AR1 MB D00 REC H
UDF3 DR LEFT H
UDF3 DR WCLK L

MB D17 REC H
MB D16 REC H
UDF2 DR 01 H
UDF2 DR 00 H
UDF3 DR LEFT H
UDF3 DR WCLK L

UDF2 DR 09/07 H
UDF2 DR 00/06 H
UDF2 DR 07/05 H
UDF2 DR 06/04 H

UDF2 DR 05/03 H
UDF2 DR 04/02 H
UDF2 DR 03/01 H
UDF2 DR 02/00 H

UDF2 DR 01/17 H
UDF2 DR 00/16 H
UDF2 DR 01 H
UDF2 DR 00 H

D8 L D1 L D2 L D3 L

UDF4 MC C TO BUS L
UDF4 MC BUS TO C L
-UDF3 DR WCLK H
UDF2 DR PC H

UDF4 MC D TO BUS L
UDF4 MC BUS TO D L
-UDF3 DR WCLK H
UDF2 DR PD H

UDF4 MC E TO BUS L
UDF4 MC BUS TO E L
UDF1 DR GET LEFT H
UDF2 DR PEL H

UDF1 DR 11/09 TM H
UDF1 DR 10/08 TM H
UDF3 DR LEFT H
UDF5 MC SET SCLK L

UDF2 D09 TM L (AK1)
UDF2 D08 TM L (AJ1)
UDF2 D07 TM L (AH2)
UDF2 D06 TM L (AH1)

UDF2 D05 TM L (AF2)
UDF2 D04 TM L (AE2)
UDF2 D03 TM L (AD2)
UDF2 D02 TM L (AB2)

UDF2 D01 TM L (AB1)
UDF2 D00 TM L (AA1)
UDF2 DPA TM L (AD1)

UDF1 DR PA H
UDF1 DR PB H
UDF2 DR PC H
UDF2 DR PD H
UDF1 DR PE H
(CL2) MR5 EVEN PAR H

SHEET 2 OF 11

REVISIONS

CHK	CHANGE NO.	REV
KM	124915-ML664	E
W SMITH		
WJS		

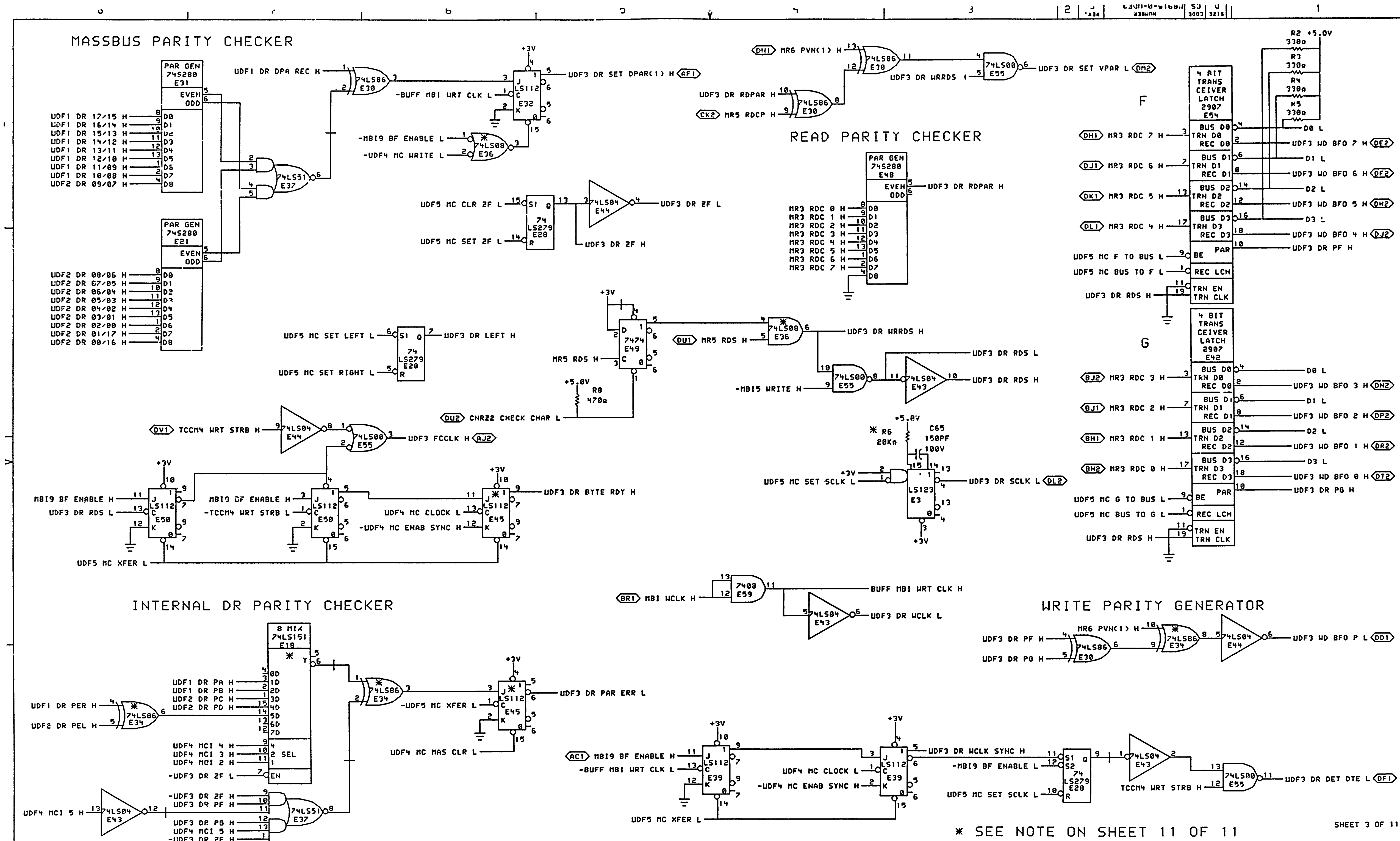
digital

DR'D. Toomey 15-FEB-79
CHK'D.
ENG. DATE
BOARD LOCATION: A08
SHEET 1 OF 1

PS:<MCQUAIN>UDF2Y.DRW 24-OCT-78 00:00 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: TM03

TITLE: UNIVERSAL DATA FORMATTER (DR2)

SIZE	CODE	NUMBER	REV.
D	CS	M8915-0-UDF2	E

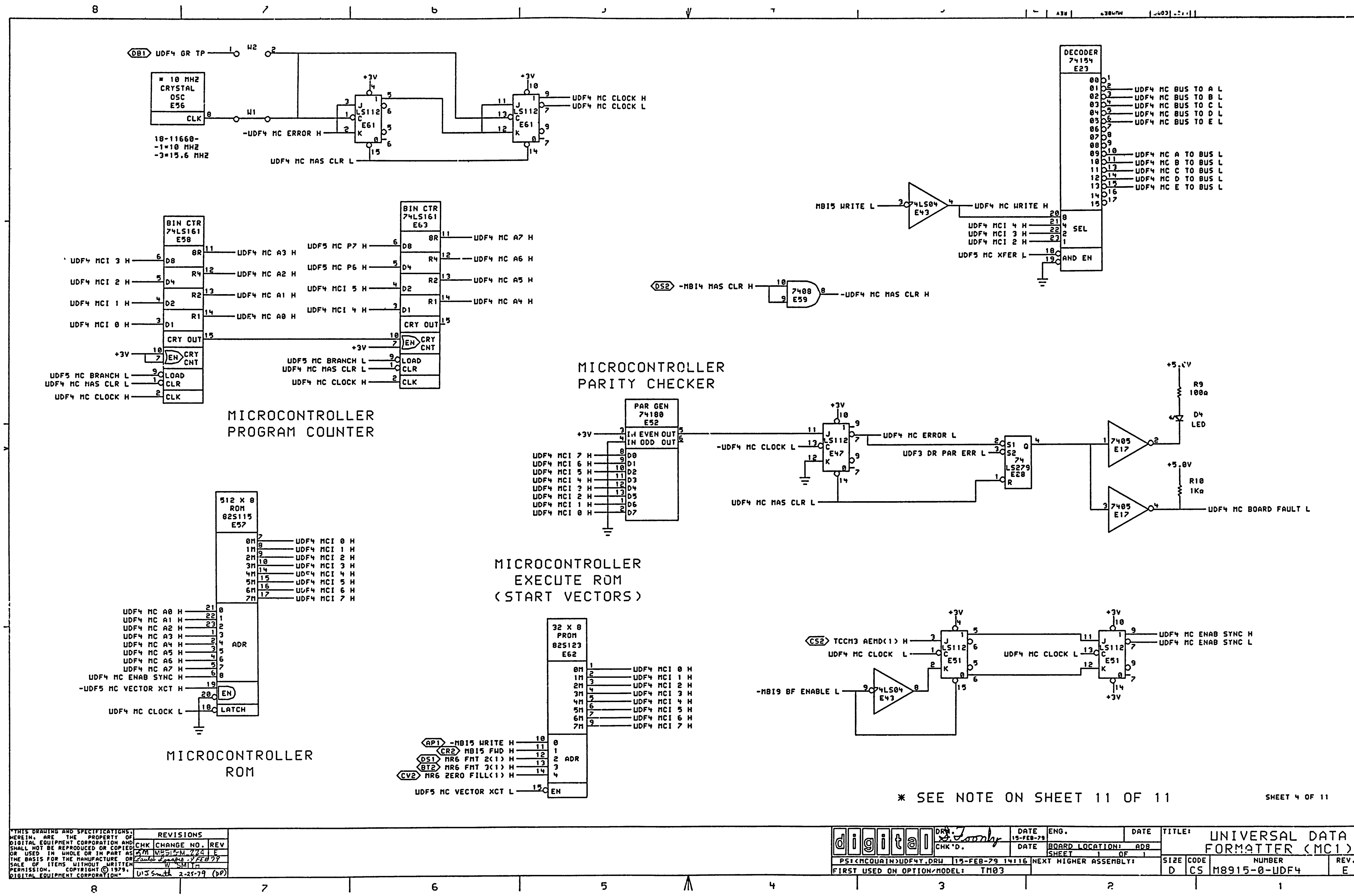


REVISIONS		
CHK	CHANGE NO.	REV
	M8915ML(CO)	E

digital

DRN.	DATE 15-FEB-79	ENG.	DATE	TITLE: UNIVERSAL DATA FORMATTER (DR3)
CHK'D.	DATE	BOARD LOCATION: AD8		
PS1:<MCQUAIN>UDF3Y.DRW	15-FEB-79 14:13	SHEET 1 OF 1		
FIRST USED ON OPTION/MODEL: TM03		NEXT HIGHER ASSEMBLY:		

SIZE	CODE	NUMBER	REV.
D	CS	M8915-0-UDF3	E



MICROCONTROLLER PROGRAM COUNTER
MICROCONTROLLER PARITY CHECKER
MICROCONTROLLER EXECUTE ROM (START VECTORS)
MICROCONTROLLER ROM
* 10 MHZ CRYSTAL OSC E56
10-11660- -1=10 MHZ -3=15.6 MHZ
UDF4 GR TP
UDF4 MC ERROR H
UDF4 MC MAS CLR L
UDF4 MC CLOCK H
UDF4 MC CLOCK L
LS112 E61
BIN CTR 74LS161 E58
BIN CTR 74LS161 E63
DECODER 74154 E23
UDF4 MC BUS TO A L
UDF4 MC BUS TO B L
UDF4 MC BUS TO C L
UDF4 MC BUS TO D L
UDF4 MC BUS TO E L
UDF4 MC A TO BUS L
UDF4 MC B TO BUS L
UDF4 MC C TO BUS L
UDF4 MC D TO BUS L
UDF4 MC E TO BUS L
MB15 WRITE L
UDF4 MC WRITE H
UDF5 MC XFER L
-MB14 MAS CLR H
-UDF4 MC MAS CLR H
PAR GEN 74180 E52
UDF4 MC ERROR L
UDF3 DR PAR ERR L
UDF4 MC BOARD FAULT L
R9 100Ω
D4 LED
R10 1KΩ
512 X 8 ROM 82S115 E57
32 X 8 PROM 82S123 E62
UDF4 MC ENAB SYNC H
UDF4 MC ENAB SYNC L
TCCM3 AEMD(1) H
-MB19 BF ENABLE L
-MB15 WRITE H
MB15 FWD H
MR6 FMT 2(1) H
MR6 FMT 3(1) H
MR6 ZERO FILL(1) H
UDF5 MC VECTOR XCT L
-UDF5 MC VECTOR XCT H
* SEE NOTE ON SHEET 11 OF 11
SHEET 4 OF 11
UNIVERSAL DATA FORMATTER (MC1)
digital
PS:<MCQUAIN>UDF4T.DRW 15-FEB-79 14:16
BOARD LOCATION: A08
FIRST USED ON OPTION/MODEL: TM03
SIZE D CODE CS NUMBER M8915-0-UDF4 REV. E
W. SMITH 2-25-79
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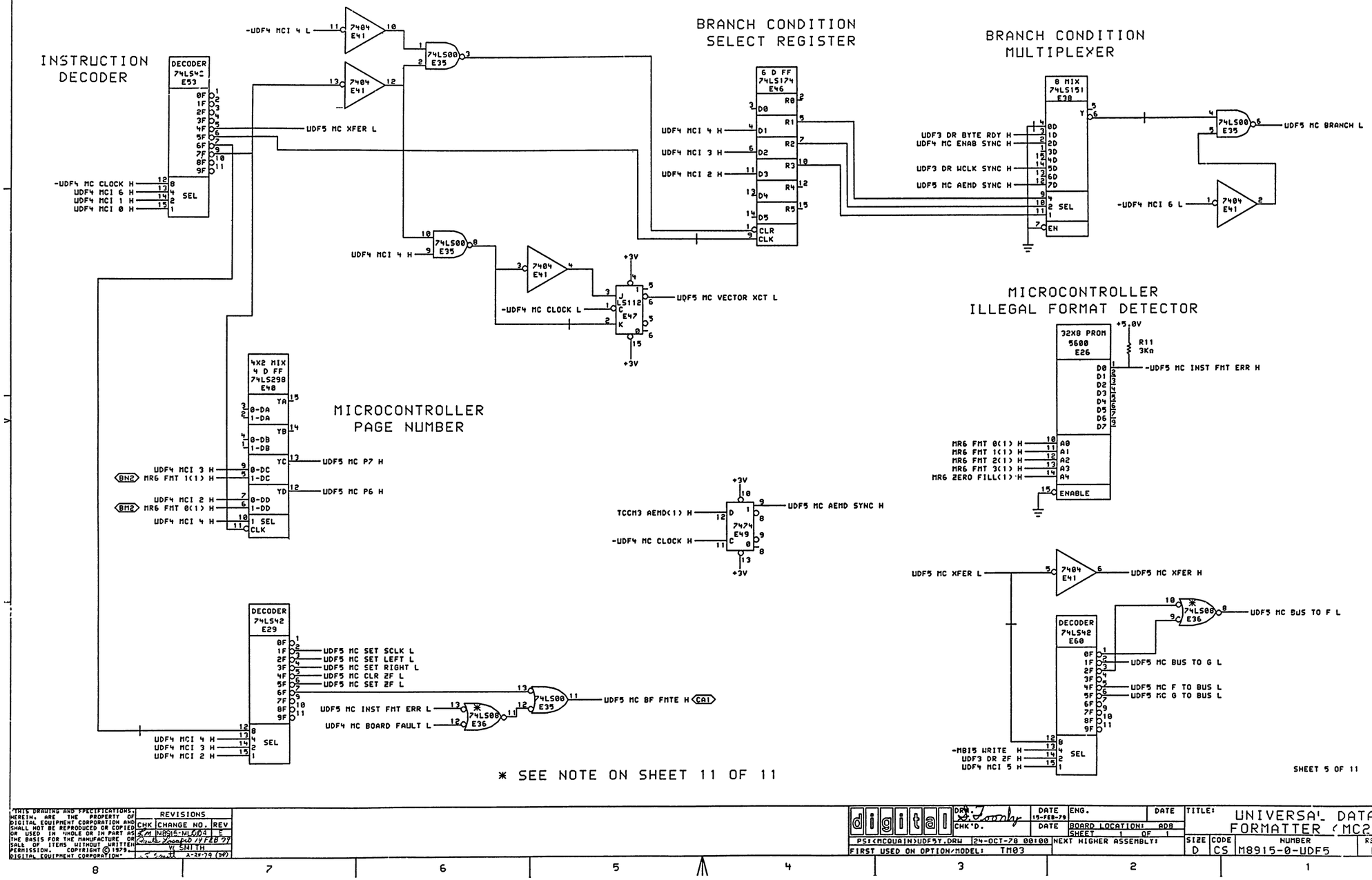


REVISIONS		
CHK	CHANGE NO.	REV
LM	M8915-ML0004	E
Ruth Leonard 19 FEB 79		
VI SMITH		
[illegible] A-26-79 (MP)		

digital	DRN Tommy	DATE 19-FEB-79	ENG.	DATE	TITLE: UNIVERSAL DATA FORMATTER (MC2)
	CHK'D.	DATE	BOARD LOCATION: A08		
			SHEET 1 OF 1		
PS:<MCQUAIN>UDF5T.DRW	24-OCT-78 00:00	NEXT HIGHER ASSEMBLY:	SIZE D	CODE CS	NUMBER M8915-0-UDF5 REV. E
FIRST USED ON OPTION/MODEL: TM03					

BF2 — NC
CB1 — NC
CC1 — NC
CD1 — NC
CE1 — NC
CF1 — NC
CH1 — NC
CJ2 — NC
CM2 — NC
CP1 — NC
CR1 — NC
DD2 — NC
DK2 — NC

NOTE:
DO NOT USE THESE THIRTEEN (13) FINGER PINS. THEY ARE CONNECTED TO EXISTING RUNS ON THE BACKPLANE FOR A TM02.

NOTE:
ALL FINGER PINS ON SIDE TWO (2) ARE CONNECTED TO PTH'S

BK1 — NC
BK2 — NC
BL1 — NC
BL2 — NC
BN1 — NC
BN1 — NC
BP1 — NC
BP2 — NC
BR2 — NC
BS1 — NC
BS2 — NC
BU1 — NC
BU2 — NC
BV1 — NC
BV2 — NC
CB2 — NC
CD2 — NC
CE2 — NC
CF2 — NC
CH2 — NC
CJ1 — NC
CK1 — NC
CL1 — NC
CM1 — NC
CM2 — NC
CN1 — NC
CP2 — NC
CS1 — NC
CT2 — NC
CU1 — NC
CU2 — NC
CV1 — NC
DA1 — NC
DB2 — NC
DC1 — NC
DE1 — NC
DH1 — NC
DP1 — NC
DR1 — NC
DV2 — NC

+5.0V — GND TTL

C1 10nF 100V
C2 10nF 100V
C3 10nF 100V
C4 10nF 100V
C5 10nF 100V
C6 10nF 100V
C7 10nF 100V
C8 10nF 100V
C9 10nF 100V
C10 10nF 100V
C11 10nF 100V
C12 10nF 100V
C13 10nF 100V
C14 10nF 100V
C15 10nF 100V
C16 10nF 100V
C17 10nF 100V

AA2
BA2
CA2
DA2

AC2
AT1
BC2
BT1
CC2
CT1
DC2
DT1

C18 10nF 100V
C19 10nF 100V
C20 10nF 100V
C21 10nF 100V
C22 10nF 100V
C23 10nF 100V
C24 10nF 100V
C25 10nF 100V
C26 10nF 100V
C27 10nF 100V
C28 10nF 100V
C29 10nF 100V
C30 10nF 100V
C31 10nF 100V
C32 10nF 100V
C33 10nF 100V
C34 10nF 100V

C35 10nF 100V
C36 10nF 100V
C37 10nF 100V
C38 10nF 100V
C39 10nF 100V
C40 10nF 100V
C41 10nF 100V
C42 10nF 100V
C43 10nF 100V
C44 10nF 100V
C45 10nF 100V
C46 10nF 100V
C47 10nF 100V
C48 10nF 100V
C49 10nF 100V
C50 10nF 100V
C51 10nF 100V

C52 10nF 100V
C53 10nF 100V
C54 10nF 100V
C55 10nF 100V
C56 10nF 100V
C57 10nF 100V
C58 10nF 100V
C59 10nF 100V
C60 10nF 100V
C61 10nF 100V
C62 10nF 100V
C63 10nF 100V
C64 10nF 100V

C67 6.8µF 35V
C68 6.8µF 35V
C69 6.8µF 35V
C70 6.8µF 35V

SHEET 6 OF 11

REVISIONS

CHK	CHANGE NO.	REV
	M8915-ML004	E

W.SMITH
WJ Smith 2-25-79 (SP)

digital

DR: S.Toomey DATE 15-FEB-79
CHK: D. DATE
ENG. DATE
BOARD LOCATION: A09
SHEET 1 OF 1
PS:<MCQUAIN>UDF6Y.DAV 24-OCT-78 00:00
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: TM03

TITLE: UNIVERSAL DATA FORMATTER (CONN)

SIZE	CODE	NUMBER	REV.
D	CS	M8915-0-UDF6	E

M8915 MICROCONTROLLER INSTRUCTION DEFINITIONS

INST	DEFINITION	FORMAT
XFR	CLEARS BYTE READY BYTE SELECT: 0 = F 1 = G WORD SELECT: 000 = 0 001 = A 010 = B 011 = C 100 = D 101 = E	7 6 5 4 3 2 1 0 X 1 BYTE SELT, WORD SELEC, 0 0
SET CLR	FUNCTION: 001 SET SCLK* 010 SET LEFT 011 SET RIGHT 100 CLR ZF 101 SET ZF 110 SET FMTE * ALSO LOADS MASS BUS OUT	7 6 5 4 3 2 1 0 X 1 0 FUNCTION 1 0 NOTE: BIT 5: SPARE BIT
BRS	CONDITION: 000 ALWAYS 001 BYTE RDY 010 BF ENABLE 101 WCLK 111 AEMD	7 6 5 4 3 2 1 0 X 1 0 CONDITION 0 1 NOTE: BIT 5: SPARE BIT
PAG	PAGE SELECT: 00 = 0 01 = 1 10 = 2 11 = 3 THE TRANSFER OCCURS ON THE NEXT SUCCESSFUL BNT. ALSO DOES A BRS UNCONDITIONAL	7 6 5 4 3 2 1 0 X 1 0 0 PAGE SELECT 1 1 NOTE: BIT 5: SPARE BIT

INST	DEFINITION	FORMAT
XCT	EXECUTE THE CURRENT START VECTOR INSTRUCTION. ALSO LOADS THE PAGE REGISTER FROM FMT1 & FMT0	7 6 5 4 3 2 1 0 1 1 0 1 0 0 1 1 NOTE: BITS 5,3,2: SPARE BITS
BNT	ADDRESS 7-6 = PAGE REGISTER ADDRESS 8 = BF ENABLE H	7 6 5 4 3 2 1 0 X 0 ADDRESS

NOTE: IN FORMAT BIT 7 IS THE PARITY BIT

M8915 ILLEGAL FORMAT ROM
5600 LOC E26
DEC PART # 23-212A1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
000	000	0 0 0 0 0 0 1 1	003		10 CORE DUMP
001	001	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
002	002	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
003	003	0 0 0 0 0 0 1 1	003		10 COMPATABILITY
004	004	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
005	005	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
006	006	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
007	007	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
008	010	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
009	011	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
010	012	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
011	013	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
012	014	0 0 0 0 0 0 1 1	003		11 NORMAL MODE
013	015	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
014	016	0 0 0 0 0 0 1 1	003		15 NORMAL MODE
015	017	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
016	020	6 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
017	021	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
018	022	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
019	023	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
020	024	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
021	025	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
022	026	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
023	027	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
024	030	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
025	031	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
026	032	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
027	033	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
028	034	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
029	035	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
030	036	0 0 0 0 0 0 0 0	000		ILLEGAL FORMAT
031	037	0 0 0 0 0 0 0 0	600		ILLEGAL FORMAT

REVISIONS		
CHK	CHANGE NO.	REV
	M8915-ML004	E
W.SMITH		
W J Smith 2-28-79		

digital — DRN. D. Toomby — DATE 15-FEB-79 — ENG. — DATE — CHK'D. — DATE — BOARD LOCATION: A08 — SHEET 1 OF 1

PS:<MCQUAIN>UDF7Y.DRW 24-OCT-78 00:00 — NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL: TM03

TITLE: UNIVERSAL DATA FORMATTER (ID1)

SIZE D — CODE CS — NUMBER M8915-0-UDF7 — REV. E

M8915 MICROCONTROLLER TRANSFER DATA FORMAT

SET LEFT	A		B		C		D		E LEFT		PDP 10 LEFT 18 BITS
	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	MASS BUSS BITS

SET RIGHT	E RIGHT	A	B	C	D	PDP 10 RIGHT 18 BITS, PDP 11 16 BITS

READ ↑   ↓ WRITE

F				G			
7	6	5	4	3	2	1	0

M8915 EXECUTE ROM
825123 LOC E62
DEC PART # 23-196A1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
000	000	1 1 0 1 1 0 1 0	332		SET FMTE
001	001	0 0 1 0 1 0 1 0	052		BNT RB10XX
002	002	0 0 0 1 0 0 1 1	023		BNT WF10XX
003	003	0 0 0 1 0 1 0 1	025		BNT RF10XX
004	004	1 1 0 1 1 0 1 0	332		SET FMTE
005	005	1 1 0 1 1 0 1 0	332		SFT FMTE
006	006	1 1 0 1 1 0 1 0	332		SET FMTE
007	007	1 1 0 1 1 0 1 0	332		SET FMTE
008	010	1 1 0 1 1 0 1 0	332		SET FMTE
009	011	1 1 0 1 1 0 1 0	332		SET FMTE
010	012	1 1 0 1 1 0 1 0	332		SET FMTE
011	013	1 1 0 1 1 0 1 0	332		SET FMTE
012	014	1 1 0 1 1 0 1 0	332		SET FMTE
013	015	1 0 0 0 0 1 0 1	205		BNT RB11XX
014	016	1 0 0 1 0 0 0 1	221		BNT WF11XX
015	017	1 0 0 0 1 1 1 1	217		BNT RF11XX
016	020	1 1 0 1 1 0 1 0	332		SET FMTE
017	021	1 1 0 1 1 0 1 0	332		SET FMTE
018	022	1 1 0 1 1 0 1 0	332		SET FMTE
019	023	1 1 0 1 1 0 1 0	332		SET FMTE
020	024	1 1 0 1 1 0 1 0	332		SET FMTE
021	025	1 1 0 1 1 0 1 0	332		SET FMTE
022	026	1 1 0 1 1 0 1 0	332		SET FMTE
023	027	1 1 0 1 1 0 1 0	332		SET FMTE
024	030	1 1 0 1 1 0 1 0	332		SET FMTE
025	031	1 1 0 1 1 0 1 0	332		SET FMTE
026	032	1 1 0 1 1 0 1 0	332		SET FMTE
027	033	1 1 0 1 1 0 1 0	332		SET FMTE
028	034	1 1 0 1 1 0 1 0	332		SET FMTE
029	035	1 1 0 1 1 0 1 0	332		SET FMTE
030	036	1 1 0 1 1 0 1 0	332		SET FMTE
031	037	1 1 0 1 1 0 1 0	332		SET FMTE

FORMATS

SYSTEM	CODE	DESCRIPTION
PDP-10	0000	CORE DUMP
PDP-10	0011	COMPATIBILTIY
PDP-11	1100	NORMAL MODE
PDP-11	1110	15 NORMAL MODE

DENSITY
800 BPI OR 1600 BPI

NOTE: BRS - SETS UP BRANCH CONDITION
BNT - BRANCHES ON PREVIOUS BRS

M8915 MICROCONTROLLER INSTRUCTION SET

BINARY DATA 7	6	5	4	3	2	1	0	OCTAL DATA	INSTRUCTIONS
0	1	0	0	0	0	0	0	100	XFR F,0
0	1	0	0	0	0	1	1	103	PAG 0
0	1	0	0	0	1	0	1	105	BRS BYTE RDY
0	1	0	0	0	1	1	0	106	SET SCLK
0	1	0	0	1	0	1	0	112	SET LEFT
0	1	0	0	1	1	0	0	114	XFR F,C
0	1	0	0	1	1	1	1	117	PAG 3
0	1	0	1	0	0	1	0	122	CLR ZF
0	1	0	1	0	1	0	0	124	XFR F,E
0	1	0	1	1	1	0	1	135	BRS AEMD
0	1	1	0	0	1	0	0	144	XFR G,A
0	1	1	0	1	0	0	0	150	XFR G,B
0	1	1	1	0	0	0	0	160	XFR G,D
1	0	0	0	0	0	0	0	200	BNT IDLE
1	1	0	0	0	0	0	1	301	BRS ALWAYS
1	1	0	0	0	1	0	0	304	XFR F,A
1	1	0	0	0	1	1	1	307	PAG 1
1	1	0	0	1	0	0	0	310	XFR F,B
1	1	0	0	1	0	1	1	313	PAG 2
1	1	0	0	1	1	1	0	316	SET RIGHT
1	1	0	1	0	0	0	0	320	XFR F,D
1	1	0	1	0	0	1	1	323	XCT
1	1	0	1	0	1	0	1	325	BRS WCLK
1	1	0	1	0	1	1	0	326	SET ZF
1	1	0	1	1	0	1	0	332	SET FMTE
1	1	1	0	0	0	0	0	340	XFR G,0
1	1	1	0	1	1	0	0	354	XFR G,C
1	1	1	1	0	1	0	0	364	XFR G,E
X	X	X	X	X	X	X	X	XXX	BNT XXXXXX

NOTE: BIT 7 IS THE PARITY BIT

REVISIONS		
CHK	CHANGE NO.	REV
LM	M8915-ML004	E
Paula Rosapio 19 FEB 79		
W.SMITH		
WJ's mitt 2 26 79 (DP)		

digital | DRN. D. Toomby | DATE 15-FEB-79 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION: AD8 | SHEET 1 OF 1
PS:<MCQUAIN>UDF8Y.DRW 24-OCT-78 00:00 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: TM03
TITLE: UNIVERSAL DATA FORMATTER (ID2)
SIZE D | CODE CS | NUMBER M8915-0-UDF8 | REV. E

M8915 WRITE MICROCONTROLLER ROM

82S115 LOC E57

DEC PART # 23-014D1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
000	000	0 1 0 0 1 1 1 1	117	INIT:	PAG 3
001	001	1 1 0 0 1 1 1 0	316		SET RIGHT
002	002	1 0 0 0 0 0 0 0	200		BNT IDLE
003	003				
004	004				
005	005				
006	006				
007	007				
008	010				
009	011				
010	012				
011	013				
012	014				
013	015				
014	016				
015	017				
016	020				
017	021				
018	022				
019	023				
020	024				
021	025				
022	026	0 1 0 0 1 1 1 1	117		PAG 3
023	027	1 0 0 0 0 0 0 0	200		BNT IDLE
024	030				
025	031	1 1 0 1 0 1 1 0	326		SET ZF
026	032	0 1 0 0 1 1 0 0	114		XFR C
027	033	1 1 0 1 0 0 0 0	320		XFR D
028	034	1 1 0 1 0 1 1 0	326		SET ZF
029	035	0 1 0 1 0 1 0 0	124		XFR E
030	036	0 1 0 0 1 0 1 0	112		SET LEFT
031	037	0 1 0 0 0 1 1 0	106		SET SCLK
032	040	0 1 0 0 1 1 1 1	117		PAG 3
033	041	0 1 0 0 1 1 1 1	117		PAG 3
034	042	1 0 0 0 0 0 0 0	200		BNT IDLE
035	043				
036	044	1 1 0 1 0 1 1 0	326		SET ZF
037	045	0 1 1 1 0 0 0 0	160		XFR G,D
038	046	1 1 0 0 1 1 1 0	316		SET RIGHT
039	047	0 1 0 0 0 1 1 0	106		SET SCLK
040	050	0 1 0 0 1 1 1 1	117		PAG 3
041	051	1 0 0 0 0 0 0 0	200		BNT IDLE
042	052				
043	053	0 1 0 0 1 1 1 1	117		PAG 3
044	054	1 0 0 0 0 0 0 0	200		BNT IDLE
045	055				
046	056	1 1 0 1 0 1 1 0	326		SET ZF
047	057	1 1 0 0 1 0 0 0	310		XFR B
048	060	0 1 0 0 1 1 0 0	114		XFR C
049	061	1 1 0 1 0 1 1 0	326		SET ZF
050	062	0 1 0 1 0 1 0 0	124		XFR E
051	063	1 1 0 0 0 1 0 0	304		XFR A
052	064	1 1 0 0 1 1 1 0	316		SET RIGHT
053	065	0 1 0 0 0 1 1 0	106		SET SCLK
054	066	0 1 0 0 1 1 1 1	117		PAG 3
055	067	1 0 0 0 0 0 0 0	200		BNT IDLE
056	070				
057	071	1 1 0 1 0 1 1 0	326		SET ZF
058	072	1 1 0 0 0 1 0 0	304		XFR A
059	073	1 1 0 0 1 0 0 0	310		XFR B
060	074	0 1 0 0 1 0 1 0	112		SET LEFT
061	075	0 1 0 0 0 1 1 0	106		SET SCLK
062	076	0 1 0 0 1 1 1 1	117		PAG 3
053	077	1 0 0 0 0 0 0 0	200		BNT IDLE

ENAB SYNC = 0
PAGE = 0

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
064	100				
065	101				
066	102				
067	103				
068	104				
069	105				
070	106				
071	107				
072	110				
073	111				
074	112				
075	113				
076	114				
077	115				
078	116				
079	117				
080	120				
081	121				
082	122				
083	123				
084	124				
085	125				
086	126				
087	127				
088	130				
089	131				
090	132				
091	133				
092	134				
093	135	0 1 0 0 1 1 1 1	117		PAG 3
094	136	1 0 0 0 0 0 0 0	200		BNT IDLE
095	137				
096	140	0 1 0 0 1 1 1 1	117		PAG 3
097	141	1 0 0 0 0 0 0 0	200		BNT IDLE
098	142				
099	143				
100	144				
101	145				
102	146				
103	147				
104	150				
105	151				
106	152				
107	153	0 1 0 0 1 1 1 1	117		PAG 3
108	154	1 0 0 0 0 0 0 0	200		BNT IDLE
109	155				
110	156	0 1 0 0 1 1 1 1	117		PAG 3
111	137	1 0 0 0 0 0 0 0	200		BNT IDLE
112	160				
113	161				
114	162				
115	163				
116	164				
117	164				
118	166	0 1 0 0 1 1 1 1	117		PAG 3
119	167	1 0 0 0 0 0 0 0	200		BNT IDLE
120	170				
121	171	0 1 0 0 1 1 1 1	117		PAG 3
122	172	1 0 0 0 0 0 0 0	200		BNT IDLE
123	173				
124	174				
125	175	0 1 0 0 1 1 1 1	117		PAG 3
126	176	1 0 0 0 0 0 0 0	200		BNT IDLE
127	177				

ENAB SYNC = 0
PAGE = 1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
128	200				
129	201				
130	202				
131	203				
132	204				
133	205				
134	206				
135	207				
136	210	0 1 0 0 1 1 1 1	117		PAG 3
137	211	1 0 0 0 0 0 0 0	200		BNT IDLE
138	212				
139	213	1 1 0 1 0 1 1 0	326		SET ZF
140	214	0 1 0 0 1 1 0 0	114		XFR C
141	215	1 1 0 1 0 0 0 0	320		XFR D
142	216	0 1 0 0 0 1 1 0	106		SET SCLK
143	217	0 1 0 0 1 1 1 1	117		PAG 3
144	220	1 0 0 0 0 0 0 0	200		BNT IDLE
145	221				
146	222				
147	223				
148	224				
149	225				
150	226				
151	227				
152	230	0 1 0 0 1 1 1 1	117		PAG 3
153	231	1 0 0 0 0 0 0 0	200		BNT IDLE
154	232				
155	233	0 1 0 0 1 1 1 1	117		PAG 3
156	234	1 0 0 0 0 0 0 0	200		BNT IDLE
157	235				
158	236				
159	237	0 1 0 0 1 1 1 1	117		PAG 3
160	240	1 0 0 0 0 0 0 0	200		BNT IDLE
161	241				
162	242	1 1 0 1 0 1 1 0	326		SET ZF
163	243	1 1 0 0 0 1 0 0	304		XFR A
164	244	1 1 0 0 1 0 0 0	310		XFR, B
165	245	0 1 0 0 0 1 1 0	106		SET SCLK
166	246	0 1 0 0 1 1 1 1	117		PAG 3
167	247	1 0 0 0 0 0 0 0	200		BNT IDLE
168	250				
169	251				
170	252				
171	253				
172	254				
173	255				
174	256				
175	257	0 1 0 0 1 1 1 1	117		PAG 3
176	260	1 0 0 0 0 0 0 0	200		BNT IDLE
177	261				
178	262	0 1 0 0 1 1 1 1	117		PAG 3
179	263	1 0 0 0 0 0 0 0	200		BNT IDLE
180	264				
181	265				
182	266				
183	267				
184	270				
185	271				
186	272	0 1 0 0 1 1 1 1	117		PAG 3
187	273	1 0 0 0 0 0 0 0	200		BNT IDLE
188	274				
189	275	0 1 0 0 1 1 1 1	117		PAG 3
190	276	1 0 0 0 0 0 0 0	200		BNT IDLE
191	277				

ENAB SYNC = 0
PAGE = 2

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
192	300	1 1 0 1 0 1 1 0	326	IDLE:	SET ZF
193	301	1 1 1 1 0 1 0 0	364		XFR E
194	302	0 1 1 0 0 1 0 0	144		XFR A
195	303	0 1 1 0 1 0 0 0	150		XFR B
196	304	1 1 1 0 1 1 0 0	354		XFR C
197	305	0 1 1 1 0 0 0 0	160		XFR D
198	306	0 1 0 1 0 0 1 0	122		CLR ZF
199	307	1 1 0 0 0 0 0 1	301		BRS ALWAYS
200	310	0 0 0 0 1 0 0 0	010		BNT.
201	311				
202	312				
203	313				
204	214				
205	315				
206	316				
207	317				
208	320				
209	321				
210	322				
211	323				
212	324				
213	325				
214	326				
215	327				
216	330	1 0 0 0 0 0 0 0	200		BNT IDLE
217	331				
218	332				
219	333	1 1 0 1 0 1 1 0	326		SET ZF
220	334	0 1 0 0 1 1 0 0	114		XFR C
221	335	1 1 0 1 0 0 0 0	320		XFR D
222	336	1 1 0 1 0 1 1 0	326		SET ZF
223	337	0 1 0 1 0 1 0 0	124		XFR E
224	340	0 1 0 0 1 0 1 0	112		SET LEFT
225	341	0 1 0 0 0 1 1 0	106		SET SCLK
226	342	1 0 0 0 0 0 0 0	200		BNT IDLE
227	343	1 1 0 1 0 1 1 0	326		SET ZF
228	344	1 1 0 0 1 0 0 0	310		XFR B
229	345	0 1 0 0 1 1 0 0	114		XFR C
230	346	1 1 0 1 0 0 0 0	320		XFR D
231	347	1 1 0 0 1 1 1 0	316		SET RIGHT
232	350	0 1 0 0 0 1 1 0	106		SET SCLK
233	351	1 0 0 0 0 0 0 0	200		BNT IDLE
234	352				
235	353				
236	354				
237	355				
238	356	1 0 0 0 0 0 0 0	200		BNT IDLE
239	357				
240	360				
241	361	1 1 0 1 0 1 1 0	326		SET ZF
242	362	0 1 0 1 0 1 0 0	124		XFR E
243	363	1 1 0 0 0 1 0 0	304		XFR A
244	364	1 1 0 0 1 1 1 0	316		SET RIGHT
245	365	0 1 0 0 0 1 1 0	106		SET SCLK
246	366	1 0 0 0 0 0 0 0	200		BNT IDLE
247	367				
248	370				
249	371	1 1 0 1 0 1 1 0	326		SET ZF
250	272	1 1 0 0 0 1 0 0	304		XFR A
251	273	1 1 0 0 1 0 0 0	310		XFR B
252	374	0 1 0 0 1 0 1 0	112		SET LEFT
253	375	0 1 0 0 0 1 1 0	106		SET SCLK
254	376	1 0 0 0 0 0 0 0	200		BNT IDLE
255	377				

ENAB SYNC = 0
PAGE = 3

SHEET 9 OF 11

REVISIONS		
CHK	CHANGE NO.	REV
	M8915-ML004	E
	W SMITH	

digital

DRN.	DATE 15-FEB-79	ENG.	DATE	TITLE: UNIVERSAL DATA FORMATTER (WCR1)
CHK'D.	DATE	BOARD LOCATION: AD8 SHEET 1 OF 1		
PS:<MCQUAIN>UDF9Y.DRW	24-OCT-78 00:00	NEXT HIGHER ASSEMBLY:		SIZE D / CODE CS / NUMBER M8915-0-UDF9 / REV. E
FIRST USED ON OPTION/MODEL: TM03				

M8915 WRITE MICROCONTROLLER ROM
82S115 LOC E57
DEC PART # 23-014D1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
256	400				
257	401				
258	402				
259	403				
260	404				
261	405	1 1 0 0 1 0 1 1	313	RB11N:	PAG 2
262	406	0 0 0 0 0 1 1 1	007		BNT RFN
263	407				
264	410				
265	411				
266	412				
267	413				
268	414				
269	415				
270	416				
271	417	1 1 0 0 1 0 1 1	313	RF11N:	PAG2
272	420	1 0 0 1 1 1 1 0	236		BNT RBN
273	421	1 1 0 0 0 1 1 1	307	WF11N:	PAG 1
274	422	0 0 0 1 0 1 1 0	026		BNT WFN
275	423	1 1 0 0 0 1 1 1	307	WF10CD:	PAG 1
276	424	0 0 1 0 0 0 1 1	043		BNT WFCD
277	425	0 1 0 0 0 1 0 1	105	RF10CD:	BRS BYTE RDY
278	426	0 0 0 1 0 1 1 0	026		BNT.
279	427	1 1 0 0 0 1 0 0	304		XFR F,A
280	430	0 1 1 0 1 0 0 0	150		XFR G,B
281	431	0 0 0 1 1 0 0 1	031		BNT.
282	432	0 1 0 0 1 1 0 0	114		XFR F,C
283	433	0 1 1 1 0 0 0 0	160		XFR G,D
284	434	0 0 0 1 1 1 0 0	034		BNT.
285	435	0 1 0 1 0 1 0 0	124		XFR F,E
286	436	0 1 0 0 1 0 1 0	112		SET LEFT
287	437	0 1 0 0 0 1 1 0	106		SET SCLK
288	440	0 1 1 0 0 1 0 0	144		XFR G,A
289	441	1 0 1 0 0 0 0 1	241		BNT.
290	442	1 1 0 0 1 0 0 0	310		XFR F,B
291	443	1 1 1 0 1 1 0 0	354		XFR G,C
292	444	1 0 1 0 0 1 0 0	244		BNT.
293	445	0 1 1 1 0 0 0 0	160		XFR G,D
294	446	1 1 0 0 1 1 1 0	316		SET RIGHT
295	447	0 1 0 0 0 1 1 0	106		SET SCLK
296	450	1 1 0 0 0 0 0 1	301		BRS ALWAYS
297	451	0 0 0 1 0 1 0 1	025		BNT RF10CD
298	452	0 1 0 0 0 1 0 1	105	RB10CD:	BRS BYTE RDY
299	453	1 0 1 0 1 0 1 1	253		BNT.
300	454	1 1 0 0 1 1 1 0	316		SET RIGHT
301	455	0 1 1 1 0 0 0 0	160		XFR G,D
302	456	1 0 1 0 1 1 1 0	256		BNT.
303	457	1 1 0 0 1 0 0 0	310		XFR F,B
304	460	1 1 1 0 1 1 0 0	354		XFR G,C
305	461	0 0 1 1 0 0 0 1	061		BNT.
307	462	0 1 0 1 0 1 0 0	124		XFR F,E
308	463	0 1 1 0 0 1 0 0	144		XFR G,A
309	464	1 1 0 0 1 1 1 0	316		SET RIGHT
309	465	0 1 0 0 0 1 1 0	106		SET SCLK
310	466	1 0 1 1 0 1 1 0	266		BNT.
311	467	0 1 0 0 1 1 0 0	114		XFR F,C
312	470	0 1 1 1 0 0 0 0	160		XFR G,D
313	471	1 0 1 1 1 0 0 1	271		BNT.
314	472	1 1 0 0 0 1 0 0	304		XFR F,A
315	473	0 1 1 0 1 0 0 0	150		XFR G,B
316	474	0 1 0 0 1 0 1 0	112		SET LEFT
317	475	0 1 0 0 0 1 1 0	106		SET SCLK
318	476	1 1 0 0 0 0 0 1	301		BRS ALWAYS
319	477	0 0 1 0 1 0 1 0	052		BNT RB10CD

ENAB SYNC = 1
PAGE = 0

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
320	500				
321	501				
322	502				
323	503				
324	504				
325	505				
326	506				
327	507				
328	510				
329	511				
330	512				
331	513				
332	514				
333	515				
334	516				
335	517				
336	520				
337	521				
338	522				
339	523				
340	524				
341	525				
342	526	1 1 0 0 1 1 1 0	316	WFN:	SET RIGHT
343	527	0 1 0 0 0 1 1 0	106		SET SCLK
344	530	1 1 0 1 0 1 0 1	325		BRS WCLK
345	531	0 0 0 1 1 0 0 1	031		BNT.
346	532	0 1 0 0 [illegible] 1 0 1	105		BRS BYTE RDY
347	533	0 1 0 0 1 1 0 0	114		XFR F,C
348	534	0 1 1 1 0 0 0 0	160		XFR G,D
349	535	1 0 0 1 1 1 0 1	235		BNT.
350	536	1 1 0 0 0 1 0 0	304		XFR F,A
351	537	0 1 1 0 1 0 0 0	150		XFR G,B
352	540	0 0 1 0 0 0 0 0	040		BNT.
353	541	1 1 0 0 0 0 0 1	301		BRS ALWAYS
354	542	0 0 0 1 0 1 1 0	026		BNT WFN
355	543	0 1 0 1 0 0 1 0	122	WFCD:	CLR ZF
356	544	0 1 0 0 1 0 1 0	112		SET LEFT
357	545	0 1 0 0 0 1 1 0	106		SET SCLK
358	546	1 1 0 1 0 1 0 1	325		BRS WCLK
359	547	1 0 1 0 0 1 1 1	247		BNT.
360	550	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
361	551	1 1 0 0 0 1 0 0	304		XFR F,A
362	552	0 1 1 0 1 0 0 0	150		XFR G,B
363	553	1 0 1 0 1 0 1 1	253		BNT.
364	554	0 1 0 0 1 1 0 0	114		XFR F,C
365	555	0 1 1 1 0 0 0 0	160		XFR G,D
366	556	1 0 1 0 1 1 1 0	256		BNT.
367	557	1 1 0 0 1 1 1 0	316		SET RIGHT
368	560	0 1 0 0 0 1 1 0	106		SET SCLK
369	561	1 1 0 1 0 1 0 1	325		BRS WCLK
370	562	0 0 [illegible] 1 0 0 1 0	062		BNT.
371	563	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
372	564	0 1 0 1 0 1 0 0	124		XFR F,E
373	565	0 1 1 0 0 1 0 0	144		XFR G,A
373	566	1 0 1 1 0 1 1 0	266		BNT.
375	567	1 1 0 0 1 0 0 0	310		XFR F,B
376	570	1 1 1 0 1 1 0 0	354		XFR G,C
377	571	1 0 1 1 1 0 0 1	271		BNT.
378	572	0 1 1 1 0 0 0 0	160		XFR G,D
379	573	1 1 0 1 0 1 1 0	326		SET ZF
380	574	0 1 0 0 0 0 0 0	100		XFR F,0
381	575	0 0 1 1 1 1 0 1	075		BNT.
382	576	1 1 0 0 0 0 0 1	301		BRS ALWAYS
383	577	0 0 1 0 0 0 1 1	043		BNT WFCD

ENAB SYNC = 1
PAGE = 1

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
384	600				
385	601				
386	602				
387	603				
388	604				
389	605	1 1 0 0 0 0 0 1	301	RB15N:	BRS ALWAYS
390	606	1 0 0 1 1 1 1 0	236		BNT RBN
391	607	0 1 0 0 0 1 0 1	105	RFN:	BRS BYTE RDY
392	610	0 0 0 0 1 0 0 0	010		BNT.
393	611	1 1 0 0 0 1 0 0	304		XFR F,A
394	612	0 1 1 0 1 0 0 0	150		XFR G,B
395	613	0 0 0 0 1 0 1 1	013		BNT.
396	614	0 1 0 0 1 1 0 0	114		XFR F,C
397	615	0 1 1 1 0 0 0 0	160		XFR G,D
398	616	0 1 0 0 0 1 1 0	106		SET SCLK
399	617	1 1 0 0 0 0 0 1	301	RF15N:	BRS ALWAYS
400	620	0 0 0 0 0 1 1 1	007		BNT RFN
401	621	1 1 0 0 1 1 1 0	316	WF15N:	SET RIGHT
402	622	0 1 0 0 0 1 1 0	106		SET SCLK
403	623	1 1 0 1 0 1 0 1	325		BRS WCLK
404	624	1 0 0 1 0 1 0 0	224		BNT.
406	625	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
405	626	1 1 0 0 0 1 0 0	304		XFR F,A
407	627	0 1 1 0 1 0 0 0	150		XFR G,B
408	630	1 0 0 1 1 0 0 0	230		BNT.
409	631	0 1 0 0 1 1 0 0	114		XFR F,C
410	632	0 1 1 1 0 0 0 0	160		XFR G,D
411	633	1 0 0 1 1 0 1 1	233		BNT.
412	634	1 1 0 0 0 0 0 1	301		BRS ALWAYS
413	635	1 0 0 1 0 0 0 1	221		BNT WF15N
414	636	0 1 0 0 0 1 0 1	105	RBN:	BRS BYTE RDY
415	637	0 0 0 1 1 1 1 1	037		BNT.
416	640	0 1 0 0 1 1 0 0	114		XFR F,C
417	641	0 1 1 1 0 0 0 0	160		XFR G,D
418	642	1 0 1 1 0 0 0 1 0	242		BNT.
419	643	1 1 0 0 0 1 0 0	304		XFR F,A
420	644	0 1 1 0 1 0 0 0	150		XFR G,B
421	645	0 1 0 0 0 1 1 0	106		SET SCLK
422	646	1 1 0 0 0 0 0 1	301		BRS ALWAYS
423	647	1 0 0 1 1 1 1 0	236		BNT RBN
424	650	0 1 0 0 1 0 1 0	112	WFC:	SET LEFT
425	651	0 1 0 0 0 1 1 0	106		SET SCLK
426	652	1 1 0 1 0 1 0 1	325		BRS WCLK
427	653	1 0 1 0 1 0 1 1	253		BNT.
428	654	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
429	655	1 1 0 0 0 1 0 0	304		XFR F,A
430	656	0 1 1 0 1 0 0 0	150		XFR G,B
431	657	0 0 1 0 1 1 1 1	057		BNT.
432	660	0 1 0 0 1 1 0 0	114		XFR F,C
433	661	0 1 1 1 0 0 0 0	160		XFR G,D
434	662	0 0 1 1 0 0 1 0	062		BNT.
435	663	1 1 0 0 1 1 1 0	316		SET RIGHT
436	664	0 1 0 0 0 1 1 0	106		SET SCLK
437	665	1 1 0 1 0 1 0 1	325		BRS WCLK
438	666	1 0 1 1 0 1 1 0	266		BNT.
439	667	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
440	670	0 1 0 1 0 1 0 0	124		XFR F,E
441	671	0 1 1 0 0 1 0 0	144		XFR G,A
442	672	1 0 1 1 1 0 1 0	272		BNT.
443	673	1 1 0 0 1 0 0 0	310		XFR F,B
444	674	1 1 1 0 1 1 0 0	354		XFR G,C
445	675	0 0 1 1 1 1 0 1	075		BNT.
446	676	1 1 0 0 0 0 0 1	301		BRS ALWAYS
447	677	1 0 1 0 1 0 0 0	250		BNT WFC

ENAB SYNC = 1
PAGE = 2

DEC LOC	OCT LOC	BINARY DATA 7 6 5 4 3 2 1 0	OCT DATA	LABEL	INSTRUCTION
448	700	1 0 0 0 0 0 0 0	200	WAIT:	BNT.
449	701	1 1 0 1 0 1 1 0	326	CLRD:	SET ZF
450	702	0 1 1 1 0 0 0 0	160		XFR G,D
451	703	0 1 0 0 0 1 1 0	106		SET SCLK
452	704	0 0 0 1 0 1 0 1	025		BNT RF10C
453	705				
454	706				
455	707				
456	710	0 1 0 1 1 1 0 1	135	GO:	BRS AEMD
457	711	1 0 0 0 1 1 0 0	214		BNT. +2
458	712	1 1 0 0 0 0 0 1	301		BRS ALWAYS
459	713	0 0 0 0 1 0 0 0	010		BNT. -2
460	714	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
461	715	1 1 0 1 0 0 1 1	323		XCT
462	716				
463	717	1 1 0 0 0 0 0 1	301		BRS ALWAYS
464	720	1 0 0 0 0 0 0 0	200		BNT WAIT
465	721				
466	722				
467	723	1 1 0 0 1 0 1 1	313	WF10C:	PAG 2
468	724	1 0 1 0 1 0 0 0	250		BNT WFC
469	725	0 1 0 1 0 0 1 0	122	RF10C:	CLR ZF
470	726	0 1 0 0 1 0 1 0	112		SET LEFT
471	727	0 1 0 0 0 1 0 1	105		BRS BYTE RDY
472	730	1 0 0 1 1 0 0 0	230		BNT.
473	731	1 1 0 0 0 1 0 0	304		XFR F,A
474	732	0 1 1 0 1 0 0 0	150		XFR G,B
475	733	1 0 0 1 1 0 1 1	233		BNT.
476	734	0 1 0 0 1 1 0 0	114		XFR F,C
477	735	0 1 1 1 0 0 0 0	160		XFR G,D
478	736	1 0 0 1 1 1 1 0	236		BNT.
479	737	0 1 0 1 0 1 0 0	124		XFR F,E
480	740	0 1 0 0 1 0 1 0	112		SET LEFT
481	741	0 1 0 0 0 1 1 0	106		SET SCLK
482	742	0 1 1 0 0 1 0 0	144		XFR G,A
483	743	0 0 1 0 0 0 1 1	043		BNT.
484	744	1 1 0 0 1 0 0 0	310		XFR F,B
485	745	1 1 1 0 1 1 0 0	354		XFR G,C
486	746	1 1 0 0 1 1 1 0	316		SET RIGHT
487	747	1 1 0 0 0 0 0 1	301		BRS ALWAYS
488	750	0 0 0 0 0 0 0 1	001		BNT CLRD
489	751				
490	752	0 1 0 0 0 1 0 1	105	RB10C:	BRS BYTE RDY
491	753	1 1 0 1 0 1 1 0	326		SET ZF
492	754	0 1 1 1 0 0 0 0	160		XFR G,D
493	755	0 1 0 1 0 0 1 0	122		CLR ZF
494	756	1 0 1 0 1 1 1 0	256		BNT.
495	757	1 1 0 0 1 0 0 0	310		XFR F,B
496	760	1 1 1 0 1 1 0 0	354		XFR G,C
497	761	0 0 1 1 0 0 0 1	061		BNT.
498	762	0 1 0 1 0 1 0 0	124		XFR F,E
499	763	0 1 1 0 0 1 0 0	144		XFR G,A
500	764	1 1 0 0 1 1 1 0	316		SET RIGHT
501	765	0 1 0 0 0 1 1 0	106		SET SCLK
502	766	1 0 1 1 0 1 1 0	266		BNT.
503	767	0 1 0 0 1 1 0 0	114		XFR F,C
504	770	0 1 1 1 0 0 0 0	160		XFR G,D
505	771	1 0 1 1 1 0 0 1	271		BNT.
506	772	1 1 0 0 0 1 0 0	304		XFR F,A
507	773	0 1 1 0 1 0 0 0	150		XFR G,B
508	774	0 1 0 0 1 0 1 0	112		SET LEFT
509	775	0 1 0 0 0 1 1 0	106		SET SCLK
510	776	1 1 0 0 0 0 0 1	301		BRS ALWAYS
511	777	0 0 1 0 1 0 1 0	052		BNT RB10C

ENAB SYNC = 1
PAGE = 3

SHEET 10 OF 11

REVISIONS		
CHK	CHANGE NO.	REV
KM	MAG-4-ML004	E
Sandra Lasagna 19 FEB 79		
W.SMITH		

digital — DRN: S.Toomey — CHK'D. — DATE 15-FEB-79 — ENG. — DATE — DATE — BOARD LOCATION: AD8 — SHEET 1 OF 1

PS:<MCQUAIN>UDF10T.DRW 24-OCT-78 00:00 — NEXT HIGHER ASSEMBLY: — FIRST USED ON OPTION/MODEL: TM03

TITLE: UNIVERSAL DATA FORMATTER (WCR2)

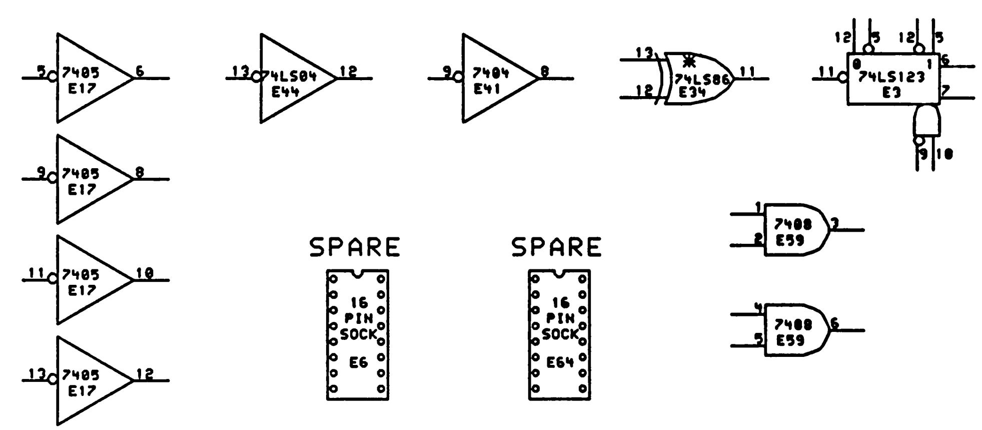
SIZE	CODE	NUMBER	REV.
D	CS	M8915-0-UDF10	E

* NOTES:

1. FOR M8915-YA THE FOLLOWING COMPONENTS CHANGES HAVE BEEN MADE

A. R6 = 6.8KΩ
B. E56 = 15.6 MHZ
C. E36 = 74S08
D. E34 = 74S86
E. E45 = 74S112
F. E18 = 74S151

M8915 SPARE GATES AND IC SOCKETS



SHEET 11 OF 11

REVISIONS		
CHK	CHANGE NO.	REV
	M8915 ML004	E

digital

DRN.	DATE 15-FEB-79	ENG.	DATE	TITLE: UNIVERSAL DATA FORMATTER (SPR)
CHK'D.	DATE	BOARD LOCATION: AD8 SHEET 1 OF 1		
PS:<MCQUAIN>UDF11Y.DRW 04-DEC-78 00:00		NEXT HIGHER ASSEMBLY:		SIZE D CODE CS NUMBER M8915-0-UDF11 REV. E
FIRST USED ON OPTION/MODEL: TM03				

8	7	6	5	4	3	2	1

COMPONENT SIDE VIEW

4-1 0-5 0-6 3-4 3-6 37 33 1

3-11 0-9 42 TYP 8.44 REF. 4-8 2-7 2-6 2-8 3-5 4 6 3-8 3-10 3-9 3-7

0-7 0-8 0-2 4-2 4-7

2-9 2-10 0-11 0-4

D C B A

V U T S R P N M L K J H F E D C B A

NOTES:

CHK	CHANGE NO	REV
	M8915-00001	B
P.RAIKUNEN	M8915-00002	C
J.HESS	M8915-ML004	D
J.HESS	M8915-ML004	E
W. SMITH		

ETCH REV. B
P.C. DESIGN DATA BASE REV. M8915.BL

SIGNATURES	DATE
DRN.	4 MAY 77
CHK'D.	5-17-77
ENG. JIM VAGIAS (PCL)	9-30-77
PROJ.ENG. JIM VAGIAS	9-30-77
PROD.	10-4-77
SCALE 2:1	
SHT. 1 OF 4	
NEXT HIGHER ASSY. B-DD-M8915-0	

digital

TITLE UNIVERSAL DATA FORMATTER

SIZE	CODE	NUMBER	REV
D	UA	M8915-0-0	E

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	YA	REFERENCE DESIGNATOR
1	1	D-MD-5012682-0-0	5012682-00	M8915	1	1	
2	2		1000019-00	150.0 MMF 100V 5%200PPM DM15S	1	1	C65
3	3		1001610-01	.01 MFD 100V -20+80 Z5U DISC	67	67	C1-C64,C66,C71,C72
4	4		1005306-00	6.8MFD 35V 10% S,TANT	4	4	C67-C70
5	5		1100114-00	D 664 QS\75PCB PIV= 25V SP	2	2	D1,D2
6	6		1110864-00	LED 2MCD@10MA	1	1	D4
7	7		1300229-00	100 1/4W 5% CC	1	1	R9
8	8		1300295-00	330 1/4W 5% CC	4	4	R2-R5
9	9		1300316-00	470 1/4W 5% CC	2	2	R1,R8
10	10		1300365-00	1 K 1/4W 5% CC	1	1	R10
11	11		1301972-00	270 1/4W 5% CC	1	1	R7
12	12		1302391-00	20 K 1/4W 5% CC	1	-	R6
13	13		1811660-01	OSCILLATOR, CRYSTAL 10 MHZ	1	-	E56
14	14		1905547-00	7474 FF-D DUAL,EDGE TRIGG	1	1	E49
15	15		1909686-00	7404 INVERTER GATE-HEX 1I	1	1	E41
16	16		1909701-00	74154 1 OF 16,DINA	1	1	E23
17	17		1909930-00	7405 INVERTER GATE-HEX 1I	1	1	E17
18	18		1910724-00	74180 PARITY TREE,9BIT GEN	1	1	E52
19	19		1911573-00	748280 PARITY GEN/CHKR,9BIT	4	4	E12,E21,E31,E40
20	20		1912697-00	LS174 FF-D HEX W/CLEAR	1	1	E46
21	21		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	2	2	E35,E55
22	22		1912803-00	LS04 INVERTER GATE-HEX 1I	5	5	E1,E7,E8,E43,E44
23	23		1912805-00	LS08 AND GATE-QUAD 2IN,PO	1	-	E36
24	24		1912819-00	LS42 DECODER,BCD-DECIMAL	3	3	E29,E53,E60
25	25		1912820-00	LS51 A-O-I GATE 2-WIDE 2I	1	1	E37
26	26		1912829-00	LS86 X-OR GATE-QUAD 2IN	2	-	E30,E34
			CONT		-	1	E30
27	27		1912834-00	LS112 FF-JK DUAL,EDGE TRIG	7	-	E32,E39,E45,E47,E50,E51,E61
			CONT		-	6	E32,E39,E47,E50,E51,E61

REVISION HISTORY			BASIC PART NO: M8915
ENG	ECO NUMBER	REV	SECTION A OF A
ER	00002	C	SECTION,VARIATION INDEX
J.H	M8915-ML003	D	[A] 00,YA
J.H	ML003	D	[B]
WJS	M8915-ML004	E	[C]
			[D]
			[E]
			[F]
			[H]
			[J]
			[K]
			[L]
			[M]
			[N]

DRN: F. MAY	DATE: 01-AUG-78	
CHK'D: C. BEVERLIE	DATE: 01-AUG-78	
DES.ENG: J. VAGIAS	DATE: 01-AUG-78	
RESP.ENG.: J. VAGIAS	DATE: 01-AUG-78	
MFG.ENG.: G. R. DILLARD	DATE: 01-AUG-78	
ASSEMBLY NUMBER: D-UA-M8915-0-0		

	D	I	G	I	T	A	L				

TITLE: PARTS LIST

UNIVERSAL DATA FORMATTER

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	M8915-0-DBP	E

FILE NAME: Z0303E.PLS

EDIT #: 20

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	YA	REFERENCE DESIGNATOR
28	28		1912837-00	LS123 ONE SHOT-DUAL,RETRIG	1	1	E3
29	29		1912844-00	LS151 MUX 1 OF 8 & DATA	2	-	E1[illegible],E38
			CONT		-	1	E38
30	30		1912847-00	LS157 MUX 1 OF 2(QUAD)	1	1	E5
31	31		1912849-00	LS161 COUNTER,SYNCHR,4BIT	2	2	E58,E63
32	32		1912864-00	LS279 LATCH,QUAD-S-R	1	1	E28
33	33		1912867-00	LS298 MUX 1 OF 4,2IN W/S	11	11	E2,E9,E11,E13-E15,E19,E20,E24,
						CONT	E25,E40
34	34		1914414-00	2907 TRANSCEIVER,BUS,QUA	8	8	E4,E10,E16,E22,E27,E33,E42,E54
35	35		23014D1-00	D1-02	1	1	E57
36	36		23196A1-00	A1-07	1	1	E62
37	37		9008337-06	HANDLE, FLIP CHIP, MAGENTA	4	4	
38	38		9006732-00	EYELET, ROLLED FLANGE, ,121 OD X	8	8	
39	39		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	2	2	W2,W3
40	40		23212A1-00	A1-03,A1-04,A1-05	1	1	E26
41	41		1300432-00	3 K 1/4W 5% CC	1	1	R11
42	42		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	A/R	
43	43		1301423-00	6.8 K 1/4W 5% CC	-	1	R6
44	44		1811660-03	OSCILLATOR, CRYSTAL 15,600 MHZ	-	1	E56
45	45		1912389-00	74S08 AND GATE-QUAD 2IN,PO	-	1	E36
46	46		1912096-00	DEC 74S86 XOR GATE,QUAD 2IN	-	1	E34
47	47		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	-	1	E45
48	48		1910956-00	74S151 MUX 1 OF 8	-	1	E18
49	49	I.C. SPARES		I.C. SPARES	2	2	E6,E64
50	50	B-DD-M8915-0-0		DRAWING DIRECTORY	REF	REF	
51	51	D-UA-M8915-0-0		UNIT ASSEMBLY	REF	REF	
52	52	D-CS-M8915-0-UDF		CIRCUIT SCHEMATIC	REF	REF	
53	53		1910155-00	DEC 7408 AND GATE,POS,QUAD 2I	1	1	E59
54	54		9107256-11	TUBING,THIN WALL,.027ID UL	A/R	A/R	

D	I	G	I	T	A	L	TITLE	SECTION	SIZE	CODE	DOCUMENT NUMBER	REV
							UNIVERSAL DATA FORMATTER	A OF A	K	PL	M8915-0-UBP	E